

**Virginia Department of Environmental
Quality
Draft Hazardous Waste Management
Storage Permit
Department of Defense (Owner)
Naval Sea Systems Command Commander,
Norfolk Naval Shipyard
Portsmouth, Virginia
EPA ID No: VA1170024813
XX XX, 2022**



Commonwealth of Virginia
VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

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HAZARDOUS WASTE MANAGEMENT PERMIT FOR CONTAINER STORAGE

Permittee: Department of Defense
Norfolk Naval Shipyard
Code 106, Building M-22, 3rd Floor
Portsmouth, Virginia 23709-1035

EPA ID No.: VA1170024813

Pursuant to Chapter 14, Article 4, Title 10.1, Code of Virginia (1950), as amended, and regulations promulgated there under by the Virginia Department of Environmental Quality, a Hazardous Waste Management Permit is issued to the Department of Defense, Norfolk Naval Shipyard (hereinafter called the Permittee) to operate as a hazardous waste storage facility. The facility being permitted is located in Portsmouth, Virginia and has a geographic location at 36° 49' 19" North latitude and 76° 17' 41" West longitude. Hazardous waste management at the above facility is limited to the following activities: Storage of hazardous waste in containers.

The Permittee shall comply with all terms and conditions set forth in this Permit including all Permit Attachments. If the Permit and the Permit Attachments conflict, the wording of the Permit shall prevail. The Permittee shall also comply with all applicable regulations contained in the Virginia Hazardous Waste Management Regulations (VHWMR) as codified in Title 9 of the Virginia Administrative Code, Agency 20, Chapter 60 (9 VAC 20-60) and the Resource Conservation and Recovery Act (RCRA) Regulations under 40 CFR Parts 124, 260, 261, 262, 264, 268, and 270, as adopted by reference in the VHWMR. For convenience, wherever regulations adopted by reference are cited in this Permit and the Permit Attachments, citations will be only those from 40 CFR.

The Commonwealth of Virginia has received authorization for its hazardous waste program under Section 3006(b) of the RCRA, 42 USC § 6926(b), to administer and enforce the RCRA in lieu of the federal hazardous waste management program. Applicable regulations are those under the VHWMR (9 VAC 20-60) which are in effect on the date of final administrative action on this Permit as well as any self-implementing statutory provisions and related regulations which are automatically applicable to the Permittee's hazardous waste management activities, notwithstanding the conditions of this Permit.

This Permit is based on the administrative record and the assumption that the information submitted by the Permittee and contained in the administrative record is complete and accurate. The Permittee's failure in the application or during the Permit issuance process to fully disclose all relevant facts, or the Permittee's misrepresentation of any relevant facts at any time, shall be grounds for the termination or modification of this Permit pursuant to 40 CFR § 124.5, § 270.41, § 270.42 and § 270.43 and shall also be grounds for initiation of an enforcement action. The Permittee shall inform the Department of any deviations from permit conditions or changes from information provided in the application. The Permittee shall inform the Department of any proposed changes that might affect the ability of the Permittee to comply with applicable regulations and/or permit conditions, or which alter any of the conditions of the Permit in any way.

This Permit is effective as of _____, and shall remain in effect until _____, unless revoked and reissued in accordance with 40 CFR § 124.5 and § 270.41, or terminated in accordance with 40 CFR § 270.43, or continued in accordance with VHWMR 9 VAC 20-60-270.B.15.

Date Signed

Leslie A. Romanchik
Hazardous Waste Program Manager
Office of Financial Responsibility
and Waste Programs

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LIST OF ATTACHMENTS

The following Permit Attachments are incorporated, in their entirety, by reference into this Permit. These incorporated attachments are enforceable conditions of this Permit. Some of the documents contain excerpts from the Permittee's Hazardous Waste Permit Application. The Department has, as deemed necessary, modified specific language excerpted from the permit application. Additional modifications are prescribed in the permit conditions (Modules I through IV), and thereby supersede the language of the Permit Attachments to the extent that there is a direct conflict between the Permit Attachments and Modules I through IV of this Permit.

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DEFINITIONS

All definitions contained in 40 CFR §§ 124.2, 260.10, 270.2, 264.141, 264.1031, 264.1051, 264.1081, and 9 VAC 20-60 are hereby incorporated, in their entirety, by reference into this Permit. Any of the definitions used below, (a) through (n), shall supersede any definition of the same term given in 40 CFR Sections 124.2, 260.10, 270.2, 264.141, 264.1031, 264.1051, 264.1081, and 9 VAC 20-60. Where terms are not defined in the regulations or the Permit, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

Throughout the Permit, all references to 40 CFR Parts 124, 261-266, 268, 270, 273, 279, are as adopted by reference in the Virginia Hazardous Waste Management Regulations, 9VAC20-60.

- a. The term "**Area of Concern**" shall mean an area at the facility or an off-site area, which is not at this time known to be a solid waste management unit, where hazardous waste and/or hazardous constituents are present or are suspected to be present as a result of a release from the Facility.
- b. The term "**Days**" shall mean calendar days except as otherwise provided herein.
- c. The term "**Department**" shall mean the Virginia Department of Environmental Quality (DEQ), (with the address as specified in Permit Condition I.I.2).
- d. The term "**Director**" shall mean the Director of the Virginia Department of Environmental Quality or his designated representative.
- e. The term "**EPA**" shall mean United States Environmental Protection Agency.
- f. The terms "**Facility**" or "**Site**" shall mean all contiguous portions of the Norfolk Naval Shipyard, Portsmouth, Virginia as identified in the physical description of the property (including structures, appurtenances, and improvements). This property description is as set forth in Permit Attachment II.A.
- g. The term "**Mixed Waste**" shall mean a waste that contains both radioactive waste and RCRA hazardous waste.
- h. The term "**Off-site**" shall mean a facility that is not within the contiguous boundaries of the permitted facility.
- i. The term "**Permit**" shall mean the Permit issued by the Virginia Department of Environmental Quality, pursuant to Chapter 14, Article 4, Title 10.1, Code of Virginia (1950), as amended, and the Virginia Hazardous Waste Management Regulations (VHWMR) as codified in Title 9 of the Virginia Administrative Code, Agency 20, Chapter 60 (9 VAC 20-60).

- j. The term "**Permittee**" shall mean the owner/operator of the facility to which the Permit is issued.
- k. The term "**Permitted Units**" shall mean those portions of the facility used for container storage of hazardous waste as described in Permit Attachment II.A
- l. The term "**Release**" shall mean any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment, including abandonment or discarding of barrels, containers, and other closed receptacles containing any hazardous substance, pollutant, or contaminant (40 CFR § 302.2 and CERCLA § 101(22)).
- m. The term "**Solid Waste Management Unit**" shall mean any discernable unit at the facility from which hazardous constituents might migrate, irrespective of whether the units were intended for the management of solid and/or hazardous wastes. Such units include any area at a facility which solid wastes have been routinely and systematically released.
- n. The term "**Unit**" refers to containers, container storage areas, tanks, surface impoundments, waste piles, land treatment units, landfills, incinerators, underground injection wells, and other physical, chemical, and biological units or treatment units.

MODULE I - STANDARD CONDITIONS

I.A. EFFECT OF PERMIT

I.A.1. Permit

This Permit, issued by the Director pursuant to 40 CFR § 270.1(c)(4), authorizes only the management of hazardous waste expressly described in this Permit and in accordance with the conditions of this Permit and with the applicable provisions of the VHWMR under 9 VAC 20-60. Any management of hazardous waste by the Permittee which is not authorized by this Permit or 9 VAC 20-60, and for which a permit is required under Chapter 14, Article 4, Title 10.1, Code of Virginia (1950), as amended, is prohibited (40 CFR § 270.4(b) and (c) and 270.30(g).) Compliance with this Permit generally constitutes compliance, for the purposes of enforcement, with Chapter 14, Article 4, Title 10.1-1426, Code of Virginia (1950), as amended. This Permit does not convey any property rights of any sort, or any exclusive privilege. Possession of a permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of Commonwealth of Virginia or local laws or regulations. Compliance with the terms of this Permit may not constitute a defense to any action brought under Chapter 14, Article 8, Title 10.1 Code of Virginia (1950), as amended, or any other Commonwealth law governing protection of the public health or the environment.

I.B. PERMIT ACTIONS

This Permit may be modified, revoked and reissued, or terminated for cause as specified in 40 CFR § 124.5, 270.30(f), 270.41, 270.42, and 270.43. The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or the notification of planned changes or anticipated noncompliance does not stay the applicability or enforceability of any permit condition. (40 CFR § 270.30(f).)

I.B.1. Permit Modifications

Permit modifications at the request of the Permittee shall be done as specified by 40 CFR § 270.42.

I.B.2. Renewal

This Permit may be renewed as specified in 9 VAC 20-60-270.B.6 and 40 CFR § 270.10(h), and Permit Condition I.D.2. Review of any application for a Permit renewal shall consider improvements in the state of control and measurement technology, as well as changes in applicable regulations.

I.C. SEVERABILITY

I.C.1. Provisions

The provisions of this Permit are severable, and if any provision of this Permit or the application of any provision of this Permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this Permit shall not be affected thereby. Invalidation of any Commonwealth or federal statutory or regulatory provision which forms the basis for any condition of this Permit does not affect the validity of any other Commonwealth or Federal statutory or regulatory basis for said condition (40 CFR § 124.16(a)(2)).

I.C.2. Permit is Stayed

In the event that a condition of this Permit is stayed for any reason, the Permittee shall continue to comply with the conditions of the existing permit which correspond to the stayed conditions until final resolution of the stayed condition unless the Director determines compliance with the related applicable and relevant permit standards would be technologically incompatible with compliance with other conditions of this Permit which have not been stayed (40 CFR §124.16(c)(2)).

I.D. DUTIES AND REQUIREMENTS

I.D.1 Duty to Comply

Pursuant to 40 CFR § 270.30(a), the Permittee shall comply with all conditions of this Permit, except that the Permittee need not comply with the conditions of this Permit to the extent and for the duration such noncompliance is authorized by an emergency permit under 40 CFR § 270.61. Any other noncompliance with the Permit, constitutes a violation of Title 10.1 Code of Virginia (1950), as amended and is grounds for enforcement action; for Permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

I.D.2 Duty to Reapply

Pursuant to 40 CFR § 270.30(b), if the Permittee wishes to or is required to continue an activity regulated by this Permit after the expiration date of this Permit, the Permittee shall apply for and obtain a new permit as specified below.

- a. The Permittee shall submit a new and complete permit application for a new permit at least 180 days before the expiration date of the Permit, unless a later date has been granted by the Director (40 CFR § 270.30(b).)
- b. Pursuant to 40 CFR § 270.10(h), the Director shall not grant permission for an

application to be submitted later than the expiration date of the existing permit.

I.D.3 Need to Halt or Reduce Activity Not a Defense

Pursuant to 40 CFR § 270.30(c), it shall not be a defense for the Permittee in an enforcement action to argue that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Permit.

I.D.4 Duty to Mitigate

In the event of noncompliance with the Permit, the Permittee shall take all reasonable steps to minimize releases to the environment, and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment (40 CFR § 270.30(d)).

I.D.5 Proper Operation and Maintenance

Pursuant to 40 CFR § 270.30(e), the Permittee shall at all times properly operate and maintain all facilities and permitted units and systems of treatment and controls (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this Permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this Permit.

I.D.6 Duty to Provide Information

Pursuant to 40 CFR § 270.30(h), the Permittee shall furnish to the Director within a reasonable time, any pertinent information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Permit; or to determine compliance with this Permit. The Permittee shall also furnish to the Director, upon request, copies of records required to be kept by this Permit.

I.D.7 Inspection and Entry

Pursuant to 40 CFR § 270.30(i), the Permittee shall allow the Director or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:

- a. Enter at reasonable times upon the Permittee's premises where a regulated

facility or activity permitted unit is located or conducted, or where records must be kept under the conditions of this Permit;

- b. Have access to and copy, at reasonable times, any records that must be kept under conditions of this Permit;
- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Permit; and
- d. Sample or monitor at reasonable times for the purposes of assuring permit compliance or as otherwise authorized by the VHWMR, any substances or parameters at any location.

I.D.8 Reporting Planned Changes

The Permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility unit. This notice shall include a description of all incidents of noncompliance reasonably expected to result from the proposed changes (40 CFR § 270.30(l)(1)).

I.D.9 Anticipated Noncompliance

The Permittee shall give advance written notice to the Director of any planned changes in the permitted facility or activity that may result in noncompliance with Permit requirements (40 CFR § 270.30(l)(2).)

I.D.10 Twenty-four Hour Reporting

Pursuant to 40 CFR § 270.30(l)(6), the Permittee shall report to the Director any noncompliance which may endanger human health or the environment. In addition, the Permittee shall also report any circumstance which may require the contingency plan to be implemented regardless of whether it was on or off-site. The information shall be provided orally within twenty-four (24) hours from the time the Permittee becomes aware of the circumstances. The information specified (a, b, and c) shall be reported verbally within 24 hours.

- a. Information concerning the release of any hazardous waste that may cause an endangerment to public drinking water supplies.
- b. Any information of a release or discharge of hazardous waste, or of a fire or explosion at the permitted units, which could threaten the environment or human health outside the facility.
- c. The description of the occurrence and its cause shall include at least the

following:

- i. Name, address, and telephone number of the owner or operator;
 - ii. Name, address, and telephone number of the facility;
 - iii. Date, time, and type of incident;
 - iv. Names and quantities of material(s) involved;
 - v. The extent of injuries, if any;
 - vi. An assessment of actual or potential hazard to the environment and human health outside the facility, where this is applicable; and
 - vii. Estimated quantity and disposition of recovered material that resulted from the incident.
- d. A written submission shall also be provided to the Director within five (5) days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the periods of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. The Director may waive the 5-day notice requirement in favor of a written report within fifteen (15) days (40 CFR § 270.30(l)(6)(iii).)

I.D.11 Other Noncompliance

The Permittee shall report all other instances of noncompliance not otherwise required to be reported pursuant to Permit Conditions I.D.10, I.D.13, and I.E.1 within 90 days of becoming aware of the noncompliance. The reports shall contain the information listed in Permit Condition I.D.10 (40 CFR § 270.30(l)(10)).

I.D.12 Other Information

Whenever the Permittee becomes aware that it failed to submit any relevant facts in the permit application, or submitted incorrect information in a permit application or in any report to the Director, the Permittee shall promptly submit such facts or information to the Director (40 CFR § 270.30(l)(11).)

I.E. **MONITORING AND RECORDS**

I.E.1. Monitoring Reports

Monitoring shall be performed and results shall be reported at the intervals specified in the Permit.

I.E.2. Samples and Measurements

Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity (40 CFR § 270.30 (j)(1)). The method used to obtain a representative sample of the waste to be analyzed must be the appropriate method specified in 40 CFR § 261, Appendix I, or an equivalent method approved by the EPA. Laboratory methods must be those specified in Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846 (3rd ed.; November, 1986, as updated), Standard Methods of Wastewater Analysis (16th ed.; 1985, as updated), or an equivalent method approved by the EPA. Additionally, the laboratory must be accredited for the analytical method, matrix and target analyte (where applicable) by the Virginia Environmental Laboratory Accreditation Program (VELAP).

I.E.3. Records of All Monitoring Information

The Permittee shall retain records of all monitoring information, including all calibration and maintenance records, and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports and records required by this Permit, all certifications required by 40 CFR § 264.73(b)(9), and records of all data used to complete the application for this Permit, for a period of at least three (3) years (or longer if specified elsewhere in this Permit) from the date of the sample collection, measurement, report, certification, or application. These retention periods may be extended by the request of the Director at any time and are automatically extended during the course of any unresolved enforcement actions regarding this facility.

- a. Records of monitoring information shall include at a minimum:
 - i. The date, exact place, and time of sampling or measurements;
 - ii. The individual(s) who performed the sampling or measurements;
 - iii. The date(s) analyses were performed;
 - iv. The individual(s) who performed the analyses;
 - v. The analytical techniques or test methods used; and
 - vi. The results of such analyses. (40 CFR § 270.30(j)).

I.F. COMPLIANCE NOT CONSTITUTING DEFENSE

Compliance with the terms of this Permit does not constitute a defense to any action brought under Chapter 14, Article 8 of Title 10.1, Code of Virginia (1950) as amended or any other Commonwealth law governing protection of the public or the environment.

I.G. TRANSFER OF PERMITS

This Permit is not transferable to any person except after notice to the Director. (40 CFR § 270.30(l)(3).) The Director may require modification or revocation and reissuance pursuant to 40 CFR § 124.5, § 270.40, § 270.41, § 270.42, and § 270.43 to change the name of the Permittee and incorporate such other requirements as may be necessary. Before transferring ownership or operation of the facility during its operation life, the Permittee shall notify the new owner or operator in writing of the requirements of 9 VAC 20-60-264 and 40 CFR Part 264 and 270. The Permittee shall send a copy of such notice to the Director (40 CFR § 264.12(c)).

I.H. PERMIT EXPIRATION AND CONTINUATION

Pursuant to 9 VAC 20-60-270 B 15 this Permit will remain in force until the effective date of a new permit if the Permittee has submitted a timely, complete application pursuant to Permit Condition I.D.2 and through no fault of the Permittee, the Director has not issued a new permit with an effective date on or before the expiration date of this Permit. All conditions of the continued Permit shall remain fully effective and enforceable.

I.I. REPORTS, NOTIFICATIONS, AND SUBMISSIONS TO THE DEPARTMENT

I.I.1. Biennial Report

The Permittees shall submit a biennial report to the Department by March 1st of every even numbered year, which covers facility activities during the previous odd numbered calendar year. At a minimum this report will include:

- a. The generator biennial report pursuant to 40 CFR § 262.41; and
- b. The hazardous waste management facility biennial report pursuant to 40 CFR § 270.30(l)(9) and § 264.75.

I.I.2. Duty to Submit Documents

All reports, notifications, or other submissions which are required by this Permit to be sent or given to the Director shall be sent electronically, by postal mail, or be hand-delivered to:

Hazardous Waste Program Manager
Office of Financial Responsibility and Waste Programs
Department of Environmental Quality
PO Box 1105
Richmond, Virginia 23218

Street Address:
1111 East Main Street, Suite 1400
Richmond, Virginia 23219

And one (1) copy of all such correspondence, reports, and submissions shall also be sent to:

Land Program Manager, Tidewater Regional Office
Department of Environmental Quality
5636 Southern Boulevard
Virginia Beach, Virginia 23462

Virginia Program Manager
Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029
Mail Code: (3LC50)

I.I.3. Signatory Requirements

All applications, reports, or other information submitted to the Department shall be signed and certified as specified by 40 CFR § 270.11.

I.J. **DOCUMENTS TO BE MAINTAINED AT THE FACILITY SITE**

I.J.1. Documents

Current copies of the following documents, as amended, revised, and modified, shall be maintained at the facility. These documents shall be maintained until closure is completed and certified by the Permittee and by an independent Virginia-registered professional engineer unless a lesser time is specified in the Permit.

- a. The Permit, including all attachments, revisions and modifications;

- b. All Part A and B Permit application supporting the Permit;
- c. Waste Analysis Plan, as required by 40 CFR § 264.13 and this Permit;
- d. Inspection schedules and logs required by 40 CFR § 264.15(b)(2) and 40 CFR § 264.15(d);
- e. Personnel training documents and records required by 40 CFR § 264.16(e) and this Permit;
- f. Contingency Plan, as required by 40 CFR § 264.53(a) and this Permit;
- g. Operating record, as required by 40 CFR § 264.73 and this Permit;
- h. Closure Plans, as required by 40 CFR § 264.112(a), and this Permit; and
- i. All other documents required by Permit Conditions I.D.8 through I.D.12 and I.E.

I.K. TRADE SECRET PROTECTION

In accordance with §10.1-1458 of the Code of Virginia (1950, as amended), the Permittee may claim any information this permit requires, or is otherwise submitted to the Director as trade secret.

- a. Information designated as trade secret submitted pursuant to this section shall be excluded from the provisions of the Virginia Freedom of Information Act as provided in subdivision 26 §2.2-3705.6 of the Code of Virginia. In doing so, the Permittee shall:
 - i. Assert the trade secret claim at the time of submittal;
 - ii. Identify the data or materials for which protection is being sought; and
 - iii. State the reasons why protection is necessary.
- b. Further information regarding trade secret protection, the basis for submittal of such a request, the Department's decision process and handling of trade secret protected information is available on the Virginia Regulatory Town Hall website; <http://townhall.virginia.gov/L/ViewGDoc.cfm?gdid=5322>.
- c. If no claim is made by the Permittee at the time of submittal, the Director may make the information available to the public without further notice.
- d. The permittee has the burden of substantiating that the claimed information is

trade secret, and the Department may request further information regarding such claim, and may reasonably determine which such information to treat as trade secret. The Department may disclose trade secret information to the appropriate officials of the Environmental Protection Agency (EPA) pursuant to the requirements of the federal Solid Waste Disposal Act, 42 USC §3251, et seq., or as otherwise required by law.

I.L. APPROVAL/DISAPPROVAL OF SUBMISSIONS

I.L.1. Review

The Department will review the plans, reports, schedules and other documents (hereinafter collectively referred to as "submissions") submitted which require the Department's approval. The Department will notify the Permittee in writing of the Department's approval, conditional approval, or disapproval of each submission.

I.L.2. Approval

Each submission required by this Permit, upon approval by the Department, is incorporated into this Permit. Any noncompliance with a Department-approved submission shall be deemed as noncompliance with this Permit. A conditionally approved submission, including any terms of such conditional approval set forth in Department's decision, shall constitute the Department-approved submission and shall be incorporated into this Permit.

I.L.3. Conditional Approval

In the event of the Department's conditional approval of submission, the Department shall specify in writing any deficiencies in the submission and the terms upon which approval of the submission is conditioned. If the Permittee disputes any term upon which approval of the submission was conditioned, the Permittee may initiate Dispute Resolution pursuant to Permit Condition I.M.

I.L.4. Disapproval

In the event of the Department's disapproval of a submission, the Department shall specify the deficiencies in writing. The Permittee shall address the specified deficiencies within a reasonable time period established by the Department taking into account the tasks to be performed, and submit the revised submission, as necessary, to the Department for approval.

I.L.5. Revision Disapproval

If the revised submission is disapproved, the Department will notify the Permittee of the deficiencies in writing and specify a schedule for the Permittee to correct

the deficiencies and resubmit the submission to the Department. The Permittee shall correct the deficiencies as directed by the Department, and forward the revised submission within the time period specified by the Department. In the event the Permittee disagrees with the Department's disapproval of the revised submission, the Permittee shall notify the Department in writing and the disagreement shall be resolved in accordance with the Dispute Resolution provision in Permit Condition I.M.

I.M. DISPUTE RESOLUTION

I.M.1. Disagreement with Department's Determination

Except as otherwise provided for in this Permit, in the event the Permittee disagrees, in whole or in part, with Department disapproval of any submission required by this Permit, the Permittee shall notify the Department in writing of its objections, and the basis thereof, within fourteen (14) days of receipt of the Department's disapproval. Such notice shall set forth the specific matters in dispute, the position(s) the Permittee asserts which should be adopted as consistent with the requirements of the Permit, the basis for the Permittee's position, and supporting documentation considered necessary for the Department's determination.

I.M.2. Resolution

The Department and the Permittee shall have an additional fourteen (14) days from the Department's receipt of the notification to meet or confer to resolve any disagreement or dispute. In the event agreement is reached, the Permittee shall submit the revised submission and implement the same in accordance with such agreement.

I.M.3. Agreement Not Met

In the event the Permittee and the Department are not able to reach an agreement on the dispute items within the additional fourteen (14) day period, the Department will notify the Permittee in writing of its decision on the dispute and the Permittee shall comply with the terms and conditions of the Department's decision in the dispute, subject to Permittee's appeal rights as described in Permit Condition I.M.4 and as otherwise may exist. The Permittee does not waive its right to assert any and all available defenses in a proceeding to enforce this Permit.

I.M.4. Appeal

In the event the Permittee disagrees with the Department's disapproval of a submission or revised submission and the Department's written decision

regarding dispute items, the Permittee may file an appeal with the Director within thirty (30) days of the disapproval (as provided for in Rule 2A:2 of the Supreme Court of Virginia).

MODULE II - GENERAL FACILITY CONDITIONS

II.A. DESIGN AND OPERATION OF FACILITY PERMITTED UNITS

The Permittee shall maintain and operate the facility permitted units to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste constituents to air, soil, or surface water that could threaten human health or the environment as required by 40 CFR §264.31.

II.B. REQUIRED NOTICES

II.B.1. Hazardous Waste from Off-Site

When the Permittee is to receive hazardous waste from an off-site source (except where the permittee is also the generator), he must inform the generator in writing that he has the appropriate Permits, and will accept the waste the generator is shipping. The Permittee shall keep a copy of this written notice as part of the operating record. (40 CFR § 264.12(b))

II.C. WASTE ANALYSIS

II.C.1. General Waste Analysis

Pursuant to 40 CFR § 264.13, the Permittee shall follow the procedures described in the Waste Analysis Plan (WAP), Permit Attachment II.C. The Permittee shall, at a minimum, maintain the functional instruments, use approved sampling and analytical methods, verify the validity of sampling and analytical procedures, and perform correct calculations. If the Permittee does not have sufficient capability for analysis, then the Permittee shall inform the laboratory performing the analysis that the laboratory must operate under the waste analysis conditions placed on the Permittee. Additionally, the laboratory must be accredited for the analytical method, matrix and target analyte (where applicable) by the Virginia Environmental Laboratory Accreditation Program (VELAP.)

II.D. SECURITY

The Permittee shall comply with the security provisions of 40 CFR § 264.14(b) as detailed in Permit Attachment II.E.

II.E. GENERAL INSPECTION REQUIREMENTS

The Permittee shall follow the inspection schedule in accordance to 40 CFR § 264.15(b), observing deterioration, malfunction, or operational errors discovered during an inspection as required by 40 CFR § 264.15(c) and as described in Permit Attachment II.C. Records of inspections shall be kept as required by 40

CFR §264.15(d) and Permit Condition II.J.2.c.iv.

II.E.1. Inspection Logs

Inspection logs will be maintained for at least three years from the date on which the inspection was completed. The Permittee shall implement remedial action when necessary; and maintain a signed and dated inspection log at the facility and available to the Department upon request 40 CFR § 264.15(d). The inspection logs provide inspection observations, deficiencies noted, and corrective action taken.

II.F. **PERSONNEL TRAINING**

The Permittee shall conduct personnel training as required by 40 CFR § 264.16. The training program shall follow Permit Attachment II.D and as described in the Permit. The Permittee shall maintain training documents and records as required by 40 CFR § 264.16.

II.F.1. Required Training

Personnel required under this Permit are to receive training, at minimum, in the following areas:

- a. Area specific management practices regarding hazardous waste handling and management activities;
- b. Contingency Plan;
- c. Security and safety;
- d. General and area specific inspections and recordkeeping;
- e. Regulatory updates which affect operations and activities; and
- f. Job function and procedural descriptions of each employee's respective role in the management of hazardous waste.

II.G. **GENERAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE**

The Permittee shall comply with the requirements of 40 CFR § 264.17. The Permittee shall follow the procedures for the handling of ignitable and reactive or incompatible waste as specified in Permit Attachment II.E.

II.H. PREPAREDNESS AND PREVENTION

II.H.1. Required Equipment

At a minimum, the Permittee shall equip the facility permitted units with the equipment set forth in the Contingency Plan, Permit Attachment II.F, as required by 40 CFR § 264.32.

II.H.2. Testing and Maintenance of Equipment

The Permittee shall test and maintain the equipment specified in Permit Condition II.H.1 and in Permit Attachment II.F, as necessary to assure its proper operation in time of emergency as required by 40 CFR § 264.33.

II.H.3. Access to Communications or Alarm System

The Permittee shall maintain access to the communication or alarm system as required by 40 CFR § 264.34.

II.H.4. Required Aisle Space

The Permittee shall maintain aisle space to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency as required by 40 CFR § 264.35 and as described in Permit Attachment II.E and depicted in Permit Attachment II.E, Figures II.E-2 and II.E-4.

II.H.5. Arrangements with Local Authorities

The Permittee shall maintain arrangements with state and local authorities as required by 40 CFR § 264.37. If State and local officials refuse to enter into or renew existing preparedness and prevention arrangements with the Permittee, the Permittee shall document this refusal in the operating record pursuant to Permit Condition II.I.2.

II.I. CONTINGENCY PLAN

II.I.1. Implementation of Plan

Pursuant to 40 CFR § 264.51, the Permittee shall immediately carry out the provisions of the Contingency Plan, Permit Attachment II.F, and follow the emergency procedures described by 40 CFR § 264.56, whenever there is an imminent or actual fire, explosion, or release of hazardous waste or constituents which could threaten human health or the environment. The Permittee shall comply with the reporting requirements provided in Permit Condition I.D.10.

II.I.2. Copies of Plan

The Permittee shall comply with the requirements of 40 CFR § 264.53.

II.I.3. Amendments to Plan

The Permittee shall review and immediately amend, if necessary, the contingency plan, as required by 40 CFR § 264.54.

II.I.4. Emergency Coordinator

The Permittee shall comply with the requirements of 40 CFR § 264.55. A trained emergency coordinator shall be available at all times in case of an emergency.

II.I.5. Emergency Procedures

The Permittee shall comply with the requirements of 40 CFR § 264.56 including the recordkeeping and reporting requirements specified in Permit Condition II.J.2.

II.J. MANIFEST SYSTEM, RECORDKEEPING AND REPORTING

In addition to the recordkeeping and reporting requirements specified elsewhere in this Permit, the Permittee shall comply with all the applicable notification, certification, and recordkeeping requirements described in 40 CFR § 264.73(b) and § 268.7.

II.J.1. Manifest System

The Permittee shall comply with the manifest requirements of 40 CFR § 264.71, § 264.72, and § 264.76 as specified in Permit Attachment II.B.

II.J.2. Operating Record

The Permittee shall maintain a written operating record at the facility, consisting of records kept for the lengths of time specified below. The record can be a compilation of various documents. The operating record shall include, but not be limited to, the information listed below:

- a. The following records shall be maintained until closure is complete and certified:
 - i. A description and the quantity of each hazardous waste received, and the method(s) and date(s) of its treatment, storage, or disposal at the permitted units;

- ii. A current map showing the location of the permitted units;
- iii. Records and results of waste analyses and waste determination required by 40 CFR § 264.13, pursuant to 40 CFR § 264.73(b)(3) and included in the Waste Analysis Plan, Permit Attachment II.B, which shall include at a minimum:
 - 1. The date(s), exact place, and times of sampling or measurements;
 - 2. The name of the individual(s) who performed the sampling or measurements;
 - 3. The date(s) analyses were performed, demonstrating that holding times for the methods specified in the Waste Analysis Plan were satisfied;
 - 4. The name of the individual(s) who performed the analyses;
 - 5. The analytical techniques or method used;
 - 6. The analytical results;
 - 7. The QA/QC summary; and
 - 8. The type and model number of the equipment used for analysis.
- iv. All written reports and records of verbal notification to the Director and the Administrator addressing releases, fires, and explosions and copies of reports prepared pursuant to 40 CFR §264.56(i), Permit Condition II.I.5, and Permit Condition I.D.11, of any incident that requires implementation of the contingency plan, which include the time, date, and details of the incident.;
- v. All reporting and submittals prepared pursuant to Permit Condition(s) I.D.10 and I.D.12;
- vi. Training records of current facility personnel pursuant to 40 CFR § 264.16(e);
- vii. Certifications pursuant to 40 CFR § 264.73(b)(9), (Waste Reduction Plan); and
- viii. The notice and certification required by a generator under 40 CFR § 264.73(15), § 264.73(b)(16) and § 268.7 (Land Disposal Restrictions.)

- b. The following records shall be maintained for a minimum of five (5) years. This time period may be extended by the Department in the event of enforcement action or notification by the Department that an investigation is ongoing.
 - i. The Facility's permitted units' operation and maintenance records and reports prepared pursuant to this Permit; and
 - ii. Progress reports and any required notifications prepared pursuant to this Permit.
- c. The following records shall be maintained for a minimum of three (3) years. This time period may be extended by the Department in the event of enforcement action or notification by the Department that an investigation is ongoing.
 - i. Biennial report submitted pursuant to Permit Condition I.I.1, 40 CFR § 262.41 and § 264.75;
 - ii. Training records of former personnel pursuant to 40 CFR § 264.16(e);
 - iii. Records of all monitoring information pursuant to Permit Condition I.E.3.; and
 - iv. Records of all inspections, pursuant to 40 CFR § 264.15(d), which shall include at a minimum:
 - 1. The date and time of the inspection;
 - 2. The name of the person performing the inspection;
 - 3. A notation of the observations made; and
 - 4. The date and nature of any repairs or remedial actions.

II.K. GENERAL CLOSURE REQUIREMENTS

II.K.1. Performance Standard

The Permittee shall close the permitted storage areas as required by 40 CFR § 264.111 and § 264.178, and in accordance with the Closure Plan, Permit Attachment II.G.

II.K.2. Amendments to Closure Plan

The Permittee shall amend the closure plan in accordance with 40 CFR § 264.112(c) whenever necessary.

II.K.3. Notification of Closure

The Permittee shall notify the Director at least 45 days prior to the date of closure is expected to begin, as required by 40 CFR § 264.112(d.)

II.K.4. Time Allowed for Closure

After receiving the final volume of hazardous waste, the Permittee shall remove from the permitted storage areas all hazardous waste and shall complete closure activities, in accordance with 40 CFR § 264.113 and the schedules specified in the Closure Plan, Permit Attachment II.G.

II.K.5. Disposal or Decontamination of Equipment

The Permittee shall decontaminate and/or dispose of all contaminated equipment, structures, and soils, as required by 40 CFR § 264.114 and the Closure Plan, Permit Attachment II.G.

II.K.6. Certification of Closure

The Permittee shall certify that the permitted storage areas have been closed in accordance with the specifications in the Closure Plan, Permit Attachment II.G, as required by 40 CFR § 264.115. In addition to the owner/operator, the certification shall be signed by an independent, qualified, Virginia registered Professional Engineer.

II.L. FINANCIAL ASSURANCE

Pursuant to 40 CFR § 264.140(c), State and Federal government facilities are exempt from all financial requirements (Subpart H) of the hazardous waste regulations.

ATTACHMENT II.A - FACILITY BACKGROUND

II.A.1. Facility Description

Norfolk Naval Shipyard (NNSY) is located on approximately 481 acres including dry-docks and industrial repair piers in the City of Portsmouth, Virginia, adjacent to the western bank of the Southern Branch of the Elizabeth River. Figure II.A-1 presents a vicinity map depicting Norfolk Naval Shipyard with respect to nearby towns, cities, highways, and waterways while Figure II.A-2 presents a facility drawing. Figures II.A-3a and II.A-3b are maps of NNSY facility features such as; buildings, structures, roads, and topography and show the locations of the Hazardous Waste Storage Unit (HWSU), Building 506 and the Mixed Waste Storage Unit (MWSU), Building 280.

The facility contact/physical address is:

Norfolk Naval Shipyard
Code 106, Building M-22, 3rd floor
Portsmouth, VA 23709-1035

NNSY has been operating as a shipyard since 1794. NNSY offers a variety of activities that involve repair and overhaul operations for any navy vessels including nuclear and non-nuclear powered carriers and submarines. Many of these operations are conducted in large building and shops and include but are not limited to painting, blasting, metal fabrication, and laboratory activities. In addition to on-site generation, NNSY accepts mixed waste from the following off-site facilities that support the Naval Nuclear Propulsion Program (NNPP):

- a. Nuclear Regional Maintenance Department; Norfolk, Virginia
- b. Huntington Ingalls Industries, Shipbuilding; Newport News, Virginia (Mixed waste received from this offsite facility can also include waste generated and shipped by Supervisor of Shipbuilding, C&R, USN, Newport News, Virginia)
- c. Nuclear Regional Maintenance Department; King's Bay, Georgia
- d. Naval Nuclear Power Training Unit; Charleston, South Carolina
- e. Nuclear Regional Maintenance Department; New London, Connecticut
- f. Electric Boat, Groton; Connecticut
- g. Portsmouth Naval Shipyard; Kittery, Maine
- h. Fluor Marine Propulsion LLC – Kesselring Site Regulated Materials; West

Milton, New York

- i. East Coast Vessels and; other NNPP activities supported by Norfolk Naval Shipyard (including out-of-state work) in the event such waste is generated at these vessels/facilities.

NNSY's Hazardous Waste Management Storage Permit is issued for two hazardous waste container storage units (permitted units), Hazardous Waste Storage Unit (HWSU) and Mixed Waste Storage Unit (MWSU) depicted in Figures II.A-2 and II.A-3. HWSU stores hazardous waste generated by NNSY operations. MWSU stores mixed waste generated by NNSY and offsite operations.

The permit capacity for the HWSU (10,824 square feet) is 86,240 gallons, and the permit capacity for the MWSU (4,050 square feet) is 29,480 gallons. A reduction in the capacity of the HWSU is a result of historical construction completed on the floor of the HWSU. The total permitted capacity that this permit allows is 114,140 gallons, as described in Permit Attachment II.E.

II.A.2. Topographic Map

II.A.2.a. General Requirements

A topographic map, including the areas within 1,000 feet of the permitted units, is included as Figure II.A-3a and II.A-3b. Due to the size of the area depicted on the map, this map is presented in a series of match-line drawings.

II.A.2.a.1. Adjacent Land Uses

Industrial and maintenance facilities, storage areas, dry-docks, piers, and administrative and housing areas cover most of NNSY. The area immediately adjacent to NNSY on the north and south is characterized as industrial land use. The eastern boundary of the facility is the Southern Branch of the Elizabeth River. Across the river to the east are petroleum storage terminals and other industrial operations.

The waterfront area provides shipping facilities for several commercial industrial operations and is interlaced with railroad lines. In addition, the waterfront area northeast of NNSY houses several ship repair and refurbishment industries. South and west of the industrialized land areas, the land becomes low-density residential, with Victory Boulevard serving as a main divider.

II.A.2.a.2. Hazardous Waste Management Facility Boundary

The permitted units are located within the legal boundaries of NNSY as indicated

in Figure II.A-1.

II.A.2.a.3. Injection and Withdrawal Wells

NNSY purchases its water supply from the City of Portsmouth. There are no withdrawal or injection wells located on or near NNSY.

II.A.2.a.4. Buildings; Treatment, Storage, and Disposal Areas; Other Structures

Figure A-3b identifies all NNSY buildings and structures located within 1,000 feet of the permitted units.

II.A.2.a.5. Recreational

Callaghan Center is within the facility boundary and is approximately 950 feet from the MWSU.

II.A.2.a.6. Storm Water Runoff Control System

Surface storm water drainage throughout NNSY is provided by ditches and storm water sewer systems. The storm water sewer systems eventually discharge into the Southern Branch of the Elizabeth River.

II.A.2.a.7. Storm, Sanitary, and Process Sewers

The locations of all sanitary, storm water, and Industrial Wastewater Treatment Plant sewers located within 1,000 feet of the permitted units are indicated on Figures II.A-4, II.A-5 and II.A-6, respectively.

II.A.2.a.8. Loading and Unloading Areas

Loading and unloading areas for the HWSU and the MWSU are shown on the facility topographic map (Figure II.A-3b) and are described in Condition II.A.6.f.

II.A.2.a.9. Fire Control Facilities

Fire protection for NNSY is provided by the Navy Regional Fire-Rescue Hampton Roads, NNSY District (hereinafter referred to as “NNSY Fire Department”) located in Building 236. The locations of fire hydrants within 1,000 feet of the permitted units are shown on Figure II.A-7. Attachment II.C further describes the fire control equipment for each permitted unit.

II.A.2.a.10. Surface Waters

There are no surface water bodies within 1,000 feet of the permitted units.

II.A.2.a.11. Flood Control/Drainage Barriers

There are no flood control or drainage barriers within 1,000 feet of the permitted units.

II.A.2.a.12. Wind Rose

Figure II.A-8 depicts annual wind rose of meteorological data collected for Norfolk, Virginia from January 2008 to August 2017.

II.A.3. Location Information

II.A.3.a. Seismic Standards

NNSY is not located in an area identified in 40 CFR 264 Appendix VI; therefore, the seismic standard does not apply.

II.A.3.b. Floodplain Standard

The Federal Emergency Management Agency Flood Insurance Rate Maps (FEMA FIRM) for the City of Portsmouth, Community Panel Number 5101040058H (eff. 2/17/2017) and 5100340015D (eff. 12/16/2016), show the permitted units located in "Zone AE." The FEMA FIRM data is shown on Figure II.A-9.

Zone AE indicates that the permitted unit buildings are within the 100-year flood zone, and the base flood elevation for the area is 8 feet, referenced to the WGS84 Vertical Datum (D_WGS_84). However, as described below, the permitted units' floor elevations are above the 100-year flood elevation.

The elevation of the HWSU floor ranges from 9.1 feet to 10 feet, which is at least 1.1 feet above the 100-year base flood elevation. The floor elevation of the MWSU is 11 feet, which is 2.5 feet above the 100-year base flood elevation. The permitted unit buildings are outside of the FEMA FIRM Moderate Wave Action limits, therefore the effect of the wave action, in addition to a 100-year flood, is expected to be insignificant, because these units are in the lee of other NNSY buildings.

II.A.4. Traffic Information

II.A.4.a. Traffic Patterns and Volumes

Traffic volume at the NNSY ranges from 5,000 to 15,000 vehicles per day. The number of vehicles entering or leaving NNSY is dependent on the number and type of Navy vessels ported for repair. The operations at NNSY determine the

staffing requirements and therefore the number of vehicles requiring access. This volume does not pose critical conditions, but some roads within NNSY become congested, particularly during peak commuter rush hours.

Vehicular traffic is controlled throughout NNSY by stop signs, yield signs, and speed limitation signs on both one-way and two-way roads. During peak-traffic hours, security patrols may also be used to direct and control traffic.

State Route 141 (Effingham Street to the north and George Washington Highway to the south) is a feeder route that abuts NNSY to the west. Gates into the facility are off Effingham Street on the west side and off Portsmouth Boulevard on the north side. The nearest interstate access to NNSY is from Interstate 264, approximately 1 mile north.

Gate 15 is considered the main gate for NNSY, and it is located approximately 300 yards southeast of the intersection of Effingham Street and George Washington Highway. This gate opens onto Williams Avenue within the NNSY. Another primary gate at NNSY is Gate 10, which is located off of and south of Portsmouth Boulevard and approximately 100 yards east of the NNSY Fire Department (Building 236).

II.A.4.a.1. Access Control

All commercial traffic is subject to safety and security inspections at Gate 15 prior to being admitted onto the NNSY. Commercial transporters of hazardous and mixed waste will enter Gate 15 and proceed south on Williams Avenue. The transporter will then turn right (west) onto Lee or Marshall Streets, approximately 75 and 150 yards, respectively, from Gate 15. Both streets lead to the MWSU (west end of Building 280), approximately 200 yards west of Williams Avenue. From Gate 15 the transporter travels south, approximately 250 yards to Building 506. The loading/unloading area at the HWSU is located on the north side of Building 506, near the intersection of Beatty Street and Williams Avenue. Mixed waste or hazardous waste from its respective location and is then loaded onto the commercial transporter. The route is reversed for exit out of the NNSY via Gate 15.

II.A.4.a.2. Road Surfaces and Load Bearing Capacities

Roads on NNSY generally have asphalt over concrete or asphalt over gravel surface and are constructed to support the American Association of State Highway and Transportation Officials standard HS20 axle loading rating. Axle loading for trucks used to transport hazardous and mixed waste at NNSY conforms to HS20 axle loading rating.

Figure II.A-1: Norfolk Naval Shipyard and Surrounding Area

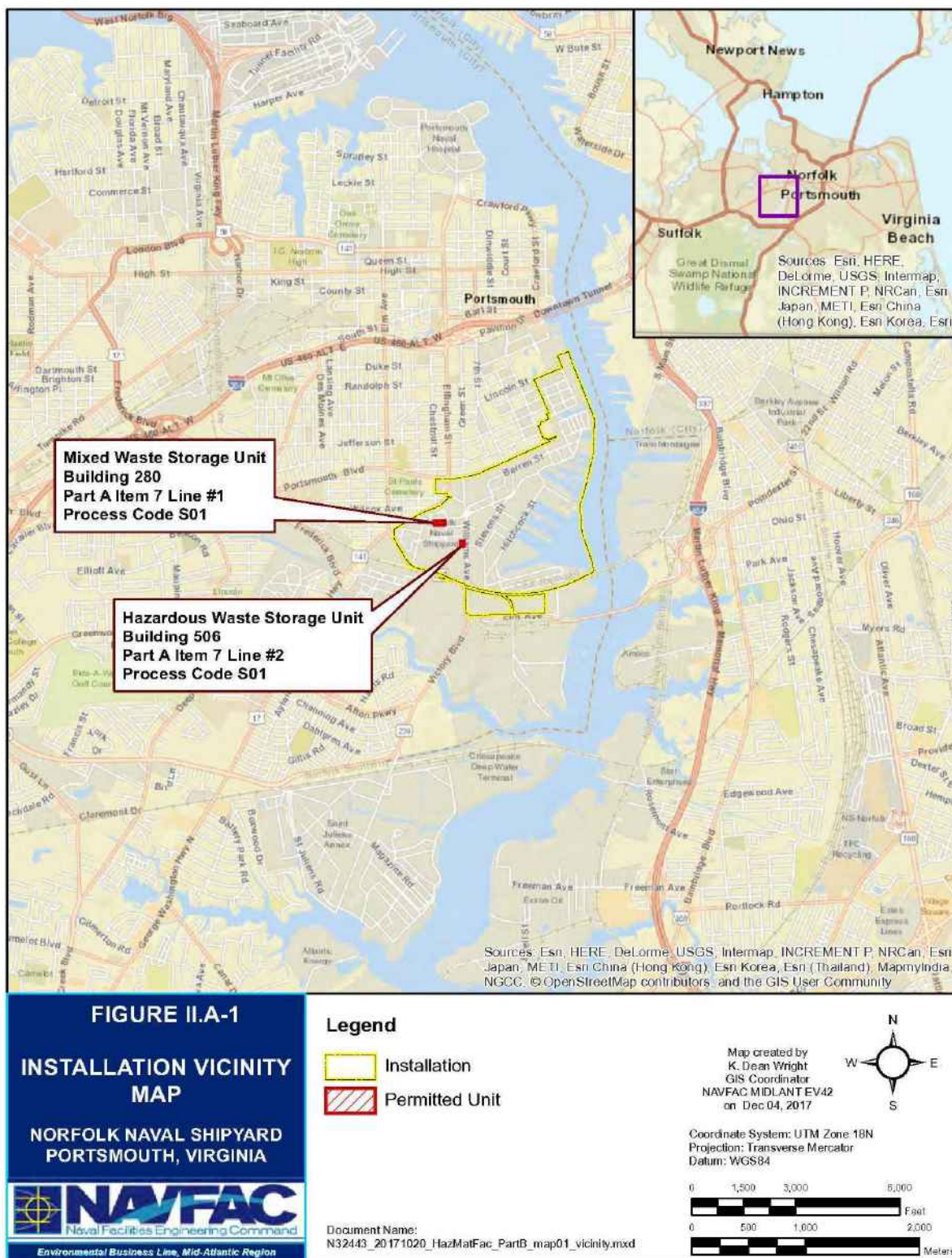


Figure II.A-2: HWSU and MWSU Locations

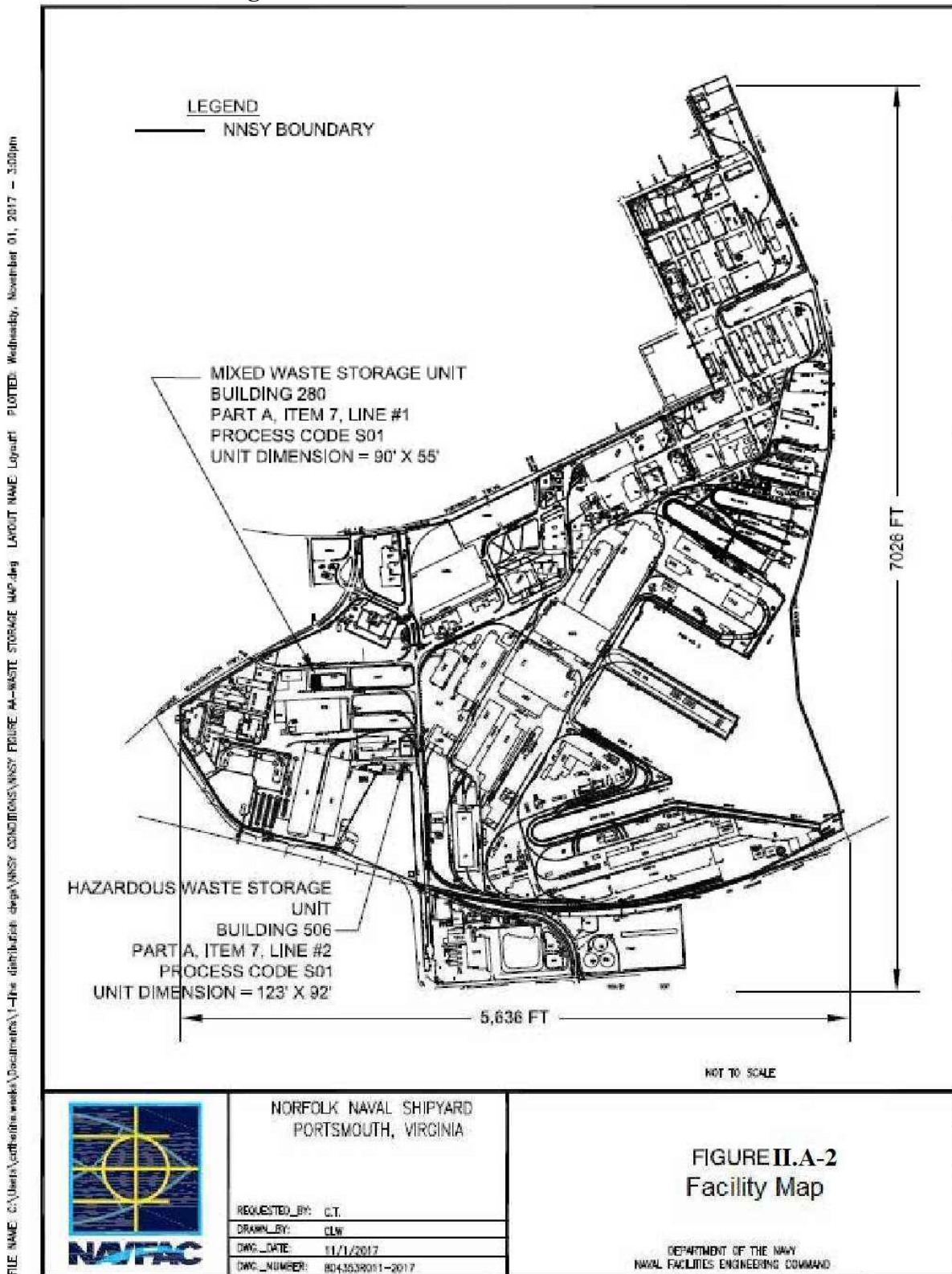


Figure II.A-3a: Topographic Map

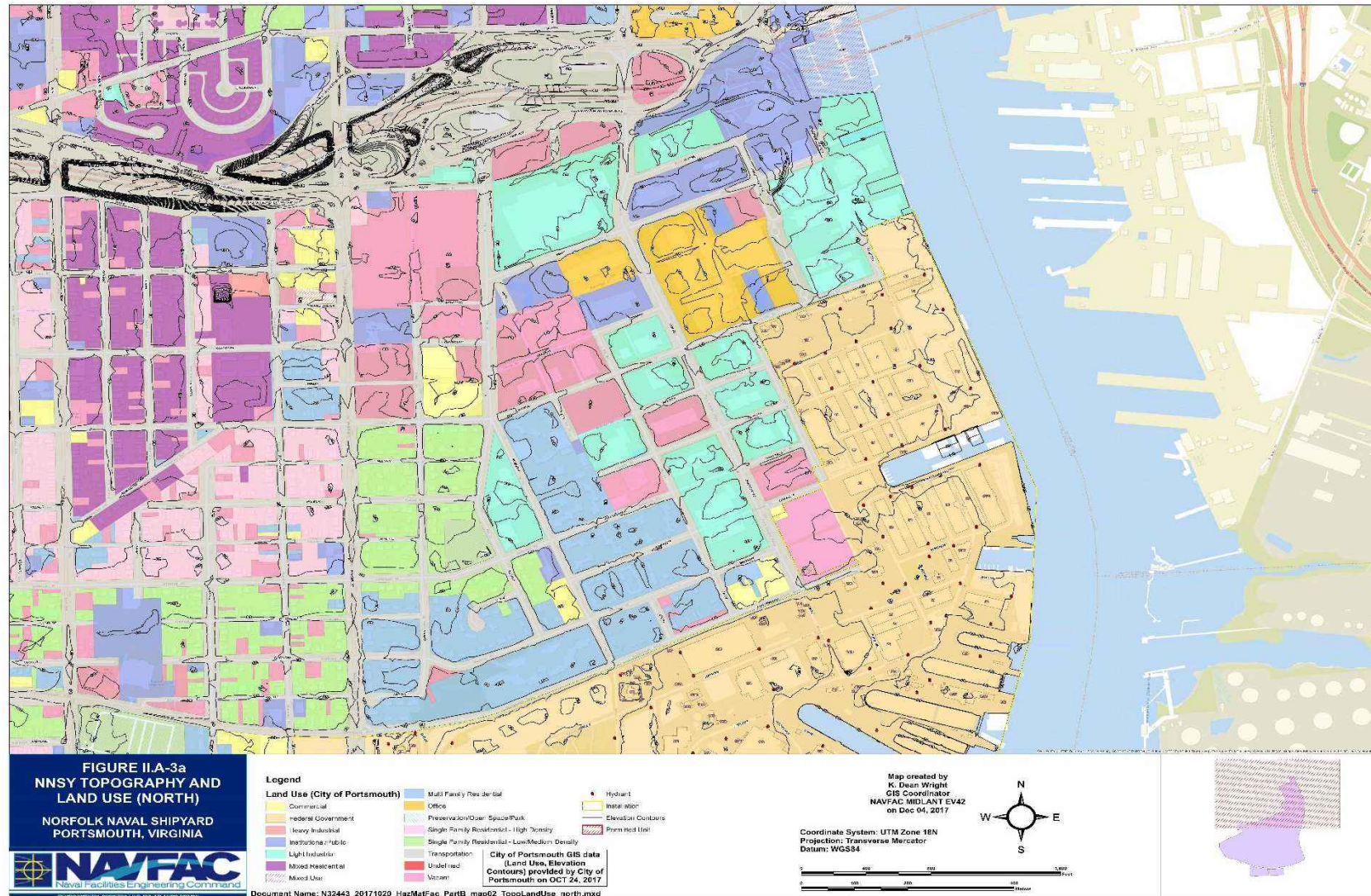


Figure II.A-3b: Topographic Map

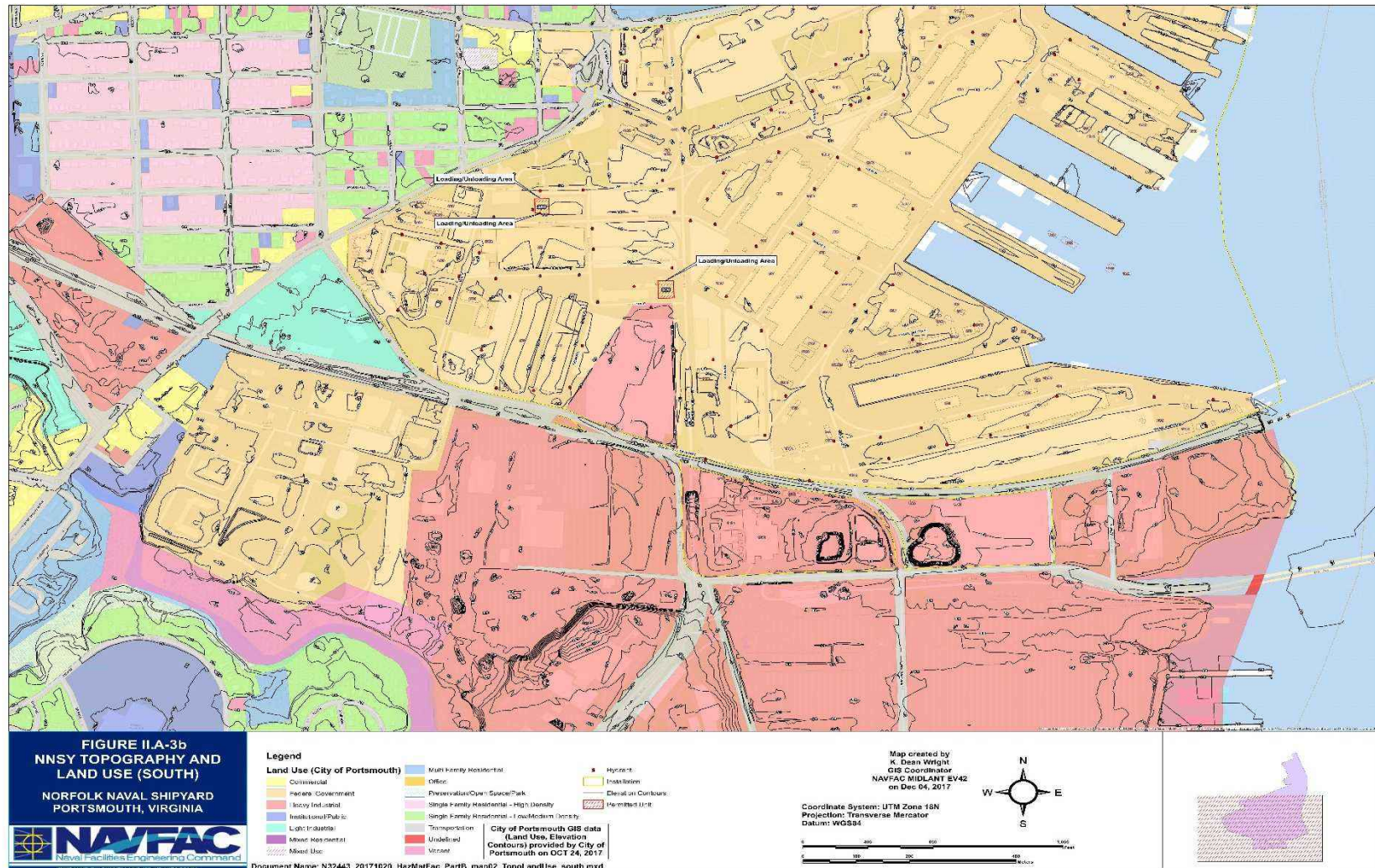


Figure II.A-4: Sanitary Sewer Infrastructure



Figure II.A-5: Stormwater Sewer Infrastructure



Figure II.A-6: Industrial Wastewater Treatment Plant

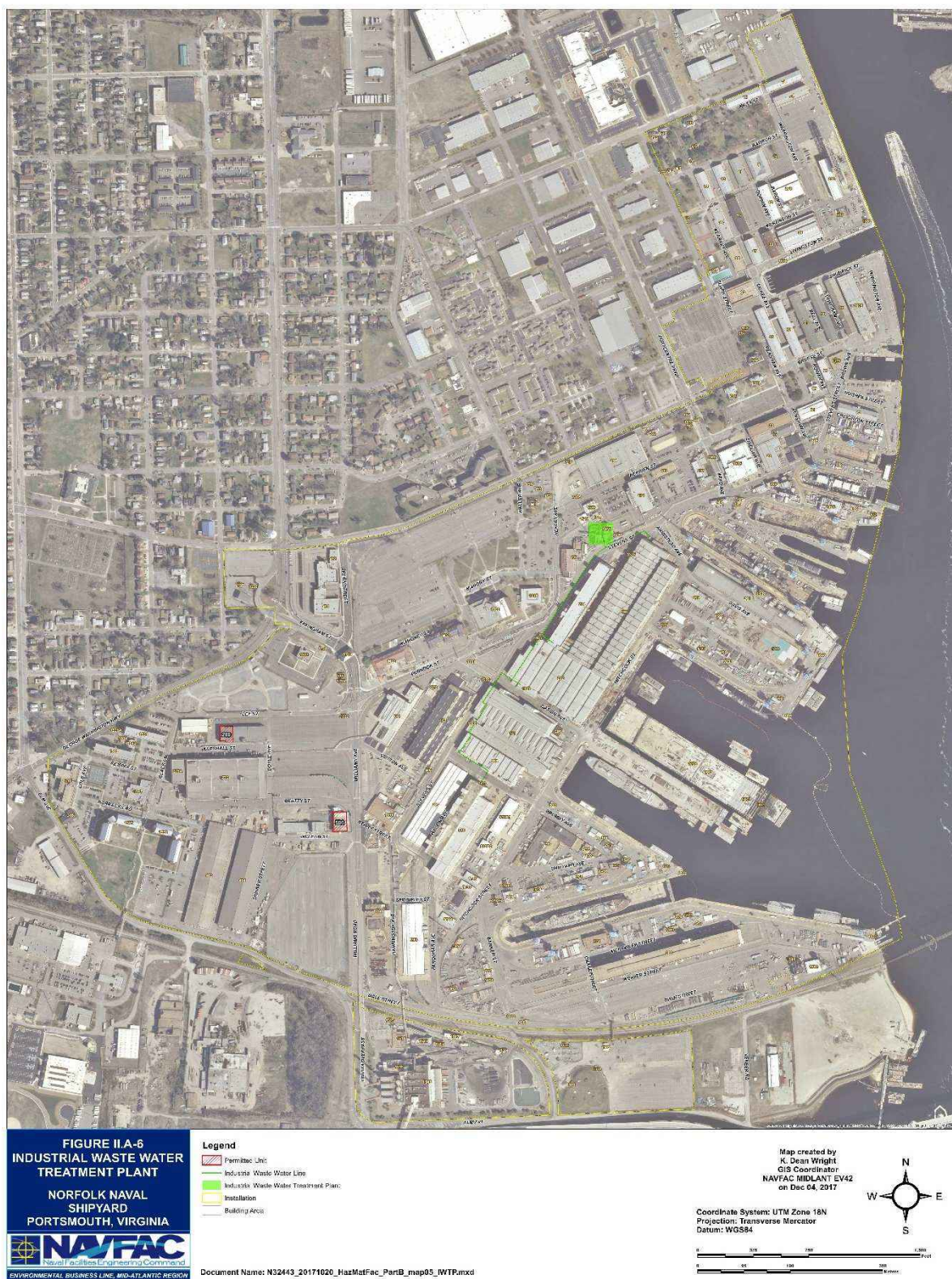


Figure II.A-7: Fire Hydrant Locations



Figure II.A-8: Wind Rose

**Figure II.A-8 Wind Rose for Norfolk International Airport (KORF)
Jan. 1, 2008 to Aug. 10, 2017**

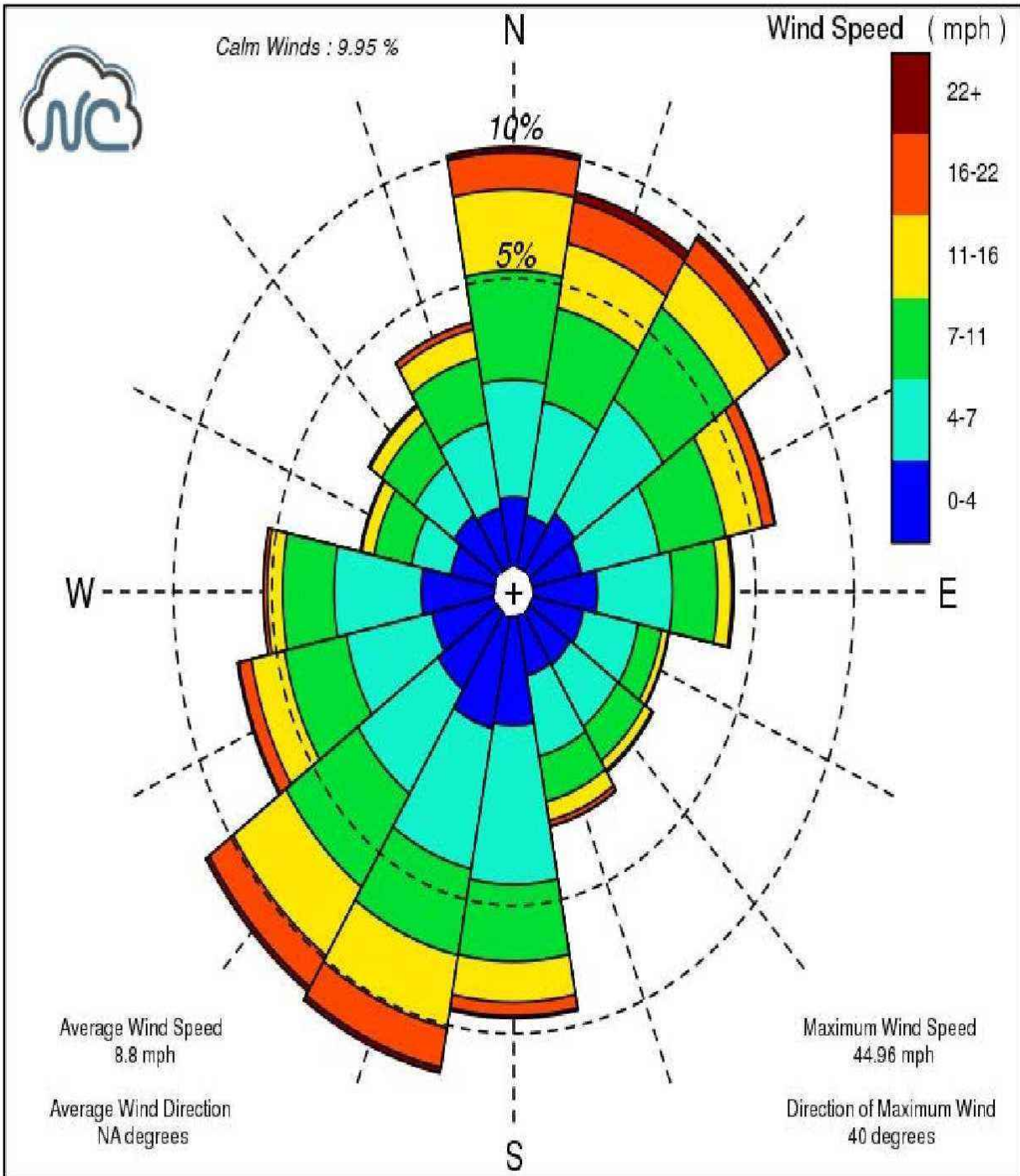
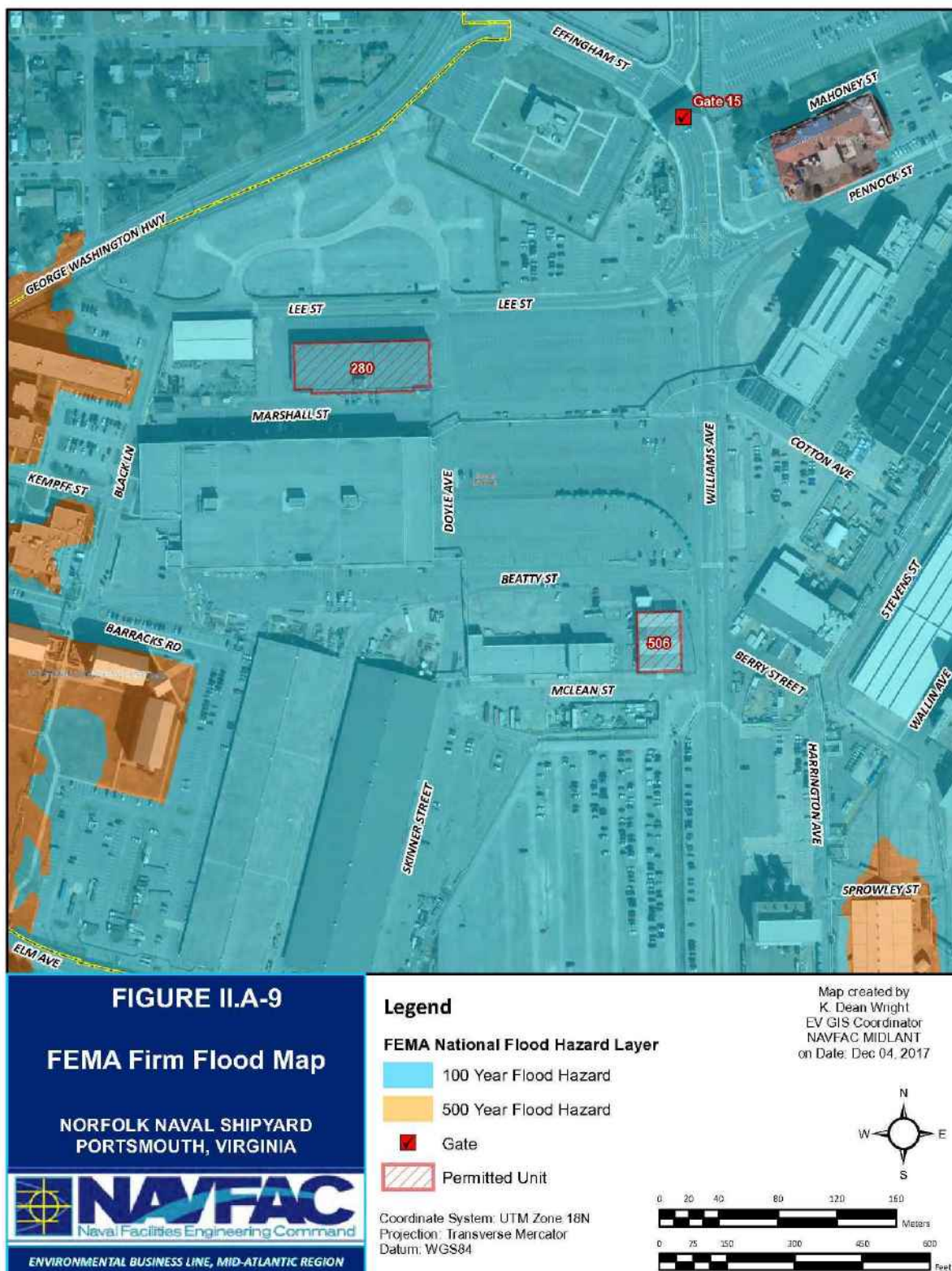


Figure II.A-9: Flood Map



ATTACHMENT II.B - WASTE ANALYSIS PLAN

II.B.1. HAZARDOUS WASTE AND MIXED WASTE GENERATION

Hazardous waste and mixed waste on-site generation includes the contiguous Norfolk Naval Shipyard (NNSY) property by activities. The Waste Dictionary contains a table listing of most known or potential waste streams generated for hazardous waste (including the waste codes and description of each profiled waste stream) from the onsite activities. The offsite facilities from which NNSY accepts mixed waste are identified in Attachment II.BB.

The Waste Characterization Sheets, shown in Figures II.B-1 and II.B-2, identify waste streams generated for hazardous waste (Figure II.B-1) mixed waste (Figure II.B-2) and includes all hazardous constituents and characteristics of a waste necessary for proper designation and management of a waste stream. The Waste Characterization Sheet will be added to the operating record when a new waste profile is added or a waste profile is modified.

The system of separation of hazardous materials is based on eight major hazard classes and has been widely accepted and implemented throughout the nation. 49 CFR Sections 172, 173, 178, and 179 are adopted as pre-transport requirements under 40 CFR 262 Subpart C.

Therefore, hazardous wastes may be classified for storage under this system to address incompatibility. 49 CFR Part 172.101 designates specific materials as hazardous and specifies requirements pertaining to its packaging, labeling, and transportation.

The following are typical types of wastes managed and stored at NNSY in a bulk and non-bulk capacity. These wastes are further defined by NNSY waste profiles and are limited to waste codes D001 through D043, F001 through F039, P001 through P205, and U001 through U411.

- Acids and Alkalies
- Adhesives
- Aerosols
- Batteries
- Bulk Waste Streams
- Cleaning Compounds

- Corrosive Preventive Compounds
- Cutting Fluids
- Cylinders
- Grease, Lubricants, and Lube Oils
- Lab Waste
- Paint and Related Material
- Photographic Chemicals
- Plating Chemical and Solutions
- Solvents
- Miscellaneous Waste
- Mixed Waste Requiring Organic/Characteristic Treatment
- Mixed Waste for Macroencapsulation Treatment
- Mixed Waste Containing Polychlorinated Biphenyls

Table II.B-2 contains a listing of most known or potential waste streams generated at NNSY. These tables include the waste codes and description of each profiled waste stream. The data shown in this table has been assembled from information in Safety Data Sheets (SDSs), System/Process Knowledge (SPK), and or direct analytical testing.

Prior to storing any waste codes not specifically mentioned above, NNSY will submit a permit modification, in accordance with 40 CFR 270.42 Appendix I.F.3, to DEQ for approval. New waste profiles will be subject to the procedures specified in Condition II.B.2.

NNSY waste profiles are not mixed, combined, or consolidated in order to prevent an adverse chemical reaction due to incompatibility; i.e., Hazard Class 6.1 cyanides are not mixed with Hazard Class 8 corrosive liquids; Hazard Class 5.2 organic peroxides are not combined with Hazard Class 3 flammable liquids; and Hazard Class 8 corrosive liquids are not consolidated with Hazard Class 4.2 spontaneously combustible materials.

Hazardous wastes are currently tracked using an electronic NNSY approved database. The system tracks hazardous material from the time of purchase to the proper disposal as hazardous waste. The system assists federal government personnel who handle, store, transport, use, or dispose of hazardous materials. NNSY waste profiles not specifically identified at the time of permit application will be subject to the procedures specified in Condition II.B.2.a prior to management at the facility.

In emergency situations, capacity limitations or as required by NNSY operations, waste may be moved from bay to bay in the Hazardous Waste Storage Unit in accordance with Module III of the permit.

II.B.2. WASTE CHARACTERIZATION

Waste characterization may utilize existing published or documented data on the waste or wastes generated from similar processes. A waste profile may incorporate data from several sources including Safety Data Sheets (SDS) from vendors or manufacturers, raw materials or composite materials, certified laboratory analysis, or generator knowledge. Such analysis may serve to further characterize a waste profile for which documented information is inadequate, to periodically confirm profile information, or to rectify a discrepancy. If the waste is controlled to the extent that deviations to the waste profile are not possible (e.g., strict engineering & administrative process controls), then the annual sampling requirement will not be required. Any chemical changes to waste generating processes will require re-evaluation; however, waste that undergoes no change (e.g., unused paint, etc.) can be disposed of on the basis of the SDS. Characterization identifies the hazardous constituents and characteristics necessary for proper designation and management of a waste and therefore, should confirm the generator's assignment of waste codes. Waste characterization is recorded on the Waste Characterization forms in Figures II.B-1 (Hazardous Waste) and II.B-2 (Mixed Waste).

The results of the waste characterization constitute the waste profile. Prior to initial receipt of a waste at the permitted units, a NNSY waste profile will be assigned based on the generator's knowledge. During routine or confirmatory sampling, if variations are identified, the waste will then be managed in accordance with the WAP. The NNSY waste profile is the result of a previous full characterization of that waste. Full characterization identifies all the hazardous constituents and characteristics necessary for proper designation and management of a waste and the assignment of applicable USEPA waste codes, hazard class, and DOT requirements for shipment.

Waste bearing USEPA hazardous waste codes as defined at 40 CFR § 261.21, 261.22, 261.23, 261.24, 261.31, and 261.33 may be assigned in any combination to properly identify a new NNSY waste profile pursuant to Hazardous Waste

Storage Unit and Mixed Waste Storage Unit requirements set forth in Permit Attachment II.B.

The profile for each waste includes waste composition in sufficient detail to determine Universal Treatment Standards specifically delineated to comply with 40 CFR § 268, Land Disposal Restrictions (LDR) requirements.

A conservative approach is employed using worst-case assumptions including maximizing the concentration of hazardous constituents in the surrogate waste. The absence of radioactivity in the surrogates does not influence the hazardous waste characteristics. Process knowledge and/or sampling analysis will also be used to determine if mixed waste or hazardous waste is a listed waste.

In emergency situations (e.g., a spill response or a generating ship that must leave port), the permitted units may receive and manage a waste prior to the completion of the waste profile. A complete waste profile will be assigned as soon as practicable, at which time the waste will be managed and stored in accordance with the profile information and Section II.B.6. Such emergency situations specifically do not include instances where a generator must remove a waste due only to a potential to exceed regulatory waste accumulation time limits.

II.B.2.a. Additional Requirements for Newly Identified Wastes

If NNSY cannot, within reasonable certainty, determine whether a particular waste is properly identified by an existing profile, the waste will be considered a new waste. New identified hazardous or mixed waste that NNSY determines is not properly identified by an existing NNSY waste profile will undergo full characterization pursuant to the conditions set forth in this attachment (before the waste may be placed in one of the permitted units). NNSY may not store newly identified hazardous waste or mixed wastes in the permitted units until completion of characterization per this attachment. A new NNSY waste will undergo initial characterization using published documented data (e.g., SDS), process knowledge, certified laboratory analyses of hazardous waste/ mixed waste, or utilizing surrogate waste (for mixed waste), as necessary to assign correct waste codes. NNSY must acquire sufficient information on the chemical composition so a hazard class defined in accordance with 49 CFR § 177.848 can be assigned. This information is maintained as an element of the NNSY waste profile, thus a step in the approval process results in determining an appropriate location at the permitted unit for the waste profile. Prior to storing any waste codes not specifically referenced in Condition II.A.6, NNSY will submit a permit modification, in accordance with 40 CFR § 270.42 Appendix I.F.3, to the DEQ for approval.

The profile for each waste includes waste composition sufficient to comply with LDR requirements in accordance with 40 CFR § 268.9(a). Underlying hazardous

constituents are identified based on generator knowledge, analytical results, and on information contained in the SDS. These constituents are noted on the waste profile.

When a new waste is proposed for storage at the permitted units, Storage locations within the permitted units are to be determined in accordance with Attachment II.E. The segregation table will be maintained in the permitted units operating record.

II.B.2.b. Waste Dilution and Aggregation of Wastes

NNSY does not perform dilution of wastes at the permitted units. Aggregation of wastes may be performed for like waste. Only wastes that are legitimately amenable to the same type of treatment will be aggregated.

II.B.3. **ADDITIONAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTES**

The methodology (Hatayama, et al 1980) was established to determine the compatibility of binary combinations of hazardous wastes. This determination is made for each waste when the profile information is submitted for approval and would only be utilized if wastes were required to be combined or mixed with other wastes for consolidation purposes.

NNSY is responsible for ensuring inbound hazardous waste from the various generating locations is stored in such a way as to prevent incompatible wastes from coming into contact with each other. Incompatible wastes are defined as those wastes that, if combined or mixed, will produce undesirable or uncontrolled reactions resulting in adverse consequences. These consequences include:

- Heat generation
- Fire
- Explosion
- Formation of toxic fumes
- Formation of flammable gases
- Volatilization of toxic or flammable substances
- Formation of substances of greater toxicity
- Formation of shock and friction sensitive compounds

- Pressurization in closed vessels
- Solubilization of toxic substances
- Dispersal of toxic dusts, mists, and particles
- Violent polymerization

For the Hazardous Waste Storage Unit, NNSY will place incoming waste containers in waste storage bays that are isolated from each other by means of walls and curbs to reduce or eliminate the potential for incompatible reactions to occur. Wastes stored in the Mixed Waste Storage Unit are packaged in separate mixed waste compatible bags/internal containers prior to loading in the storage container. The facility layout for each permitted unit (Hazardous Waste Storage Unit and Mixed Waste Storage Unit) is shown in Attachment II.E, Figures II.E-1 and II.E-3. Compatibility of the wastes is confirmed by using the reference materials incorporated into Appendix II.B-1:

II.B.4. WASTE ANALYSIS PERTAINING TO LAND DISPOSAL RESTRICTIONS

Restricted hazardous wastes are those wastes that are restricted from land disposal unless the wastes meet certain specific conditions or treatment standards and are defined in 40 CFR § 268 Subpart C. Waste bearing these waste codes, or soil or debris contaminated with these waste materials, must meet treatment standards specified in 40 CFR § 268 Subpart D or other conditions specified in Subpart C prior to land disposal. The information collected on the documentation is used to create a unique record of each waste profile.

II.B.4.a. Frequency of Analyses

Hazardous wastes managed by NNSY that are under the control to the extent that prevents deviation of the waste (e.g., laboratory conditions or nuclear and non-nuclear engineering controls) or hazardous waste that undergoes no change, (e.g., unused paint, chemical products in their original containers, etc.) are not subject to re-evaluation of the waste profile. Mixed wastes and hazardous wastes that have previously undergone characterization, and managed thereafter by strict engineering controls, do not require re-evaluation.

Re-Evaluation Process

In accordance with 40 CFR 264.13(a)(3), a waste profile re-evaluation is performed prior to disposal:

- If the process or operation generating the hazardous waste has significantly

changed;

- If a discrepancy between the designation determination resulting from the inspection or analysis performed upon receipt and the waste designation indicated on the profile for that waste; all waste generated offsite will be properly characterized in accordance with Condition II.B.3 before NNSY can accept the waste.

Hazardous wastes are currently tracked using an online electronic NNSY approved database. The system tracks hazardous material from the time of purchase to the proper disposal as hazardous waste. The system assists federal government personnel who handle, store, transport, use, or dispose of hazardous materials.

Mixed waste is currently tracked using a computer-based system for the tracking of mixed waste items from the time of generation to the proper disposal as mixed waste. The tracking system allows differentiation between wastes which are generated on-site and wastes which are received from off-site.

II.B.5. REQUIREMENTS FOR MIXED WASTES GENERATED OFF-SITE

II.B.5.a. Examination of Off-site Waste

When mixed waste is received from off-site, it will be inspected by MWSU personnel for identification and for verification that the waste matches the identity of the waste designated on the accompanying manifest, shipping papers and electronic verification system (photographs). In accordance with the WAP and written acceptance agreements between NNSY and off-site generating facilities, all waste will undergo characterization before the waste is sent to the MWSU. No mixed waste from an offsite generator will be accepted at the permitted unit without a waste manifest.

The following steps will be used to verify the identity of the off-site waste received:

- Verify that the waste received matches the information provided on waste identification forms previously submitted by the generator in accordance with written waste acceptance agreements and that all applicable analysis information is included in the submittal.
- Verify that all of the shipping documents reflect the proper information.

II.B.5.b. Procedures in the Event of a Discrepancy

Should any of the examinations performed pursuant to Condition II.B.5.a differ

from information identified in the waste manifest, NNSY will determine whether the waste as received is authorized for storage at the facility MWSU by this Permit. If the waste may be managed at the facility MWSU, NNSY may sign the manifest and accept the waste into the storage area in accordance with standard procedures. If the waste cannot be managed at the facility MWSU, the shipment will be rejected and returned to the generator for alternate transfer, storage, and disposal facility.

II.B.6. SAMPLING METHODS

Physical characterization includes parameters such as container information on labels, visual appearance, color, physical state, and miscibility in water, and the quantity received. Chemical characterization includes screening for pH and testing for flash point or other laboratory analyses necessary to delineate the chemical nature of the waste. Many wastes are heterogeneous; therefore, care must be taken to obtain a representative sample. In sampling wastes, consideration should be given to the uniformity of the waste in a container, and to daily variations in production which may cause the waste to vary. Sampling protocols will be in accordance with the latest version of SW-846 requirements.

Strict chain-of-custody records will be maintained for these samples collected for regulatory compliance. Each person who handles the sample will, upon receipt, sign and date the chain of custody. To ensure adequate chain-of-custody procedures, SW-846 procedures must be followed. The sample bottle or bag must be compatible with the waste. Corrosive samples must not be placed in metal containers. Samples that contain PCBs must not be placed in polypropylene (plastic) containers.

USEPA procedures for sample preservation must be followed, and USEPA and DOT regulations for transporting hazardous materials/waste must be met. Laboratories must certify their procedures are USEPA approved and in that certification, reference USEPA SW-846.

The protocols involved in sample collection, preserving sample integrity, providing strict chain-of-custody records, and analysis techniques will be specified by law, regulation, or directive as applicable:

- Test Methods for Evaluating Solid Waste, SW-846, Latest Edition, United States Environmental Protection Agency
- Navy Environmental Compliance Sampling and Field Testing Procedures Manual, U.S. Navy. NAVSEA T0300-AZ-PRO-010 latest revision
- Collection and Preservation of Groundwater and Soil Samples, 40 CFR § 136.3, Table II latest revision

- American Society for Testing and Materials (ASTM) latest revision
- Any newly developed testing methods approved by regulatory agencies

II.B.6.a. Parameters and Rationale

Waste analysis parameters are selected based on the existing knowledge of the nature and characteristics of the wastes. Waste analysis is used to characterize and classify solid and hazardous wastes stored in the permitted units. The factors referenced in Condition II.B.2 and below, provide the purpose and rationale for selection of the waste analytical parameters:

- i. Analysis shall be performed in accordance with the current edition of U.S. Environmental Protection Agency (USEPA) SW-846, Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, to determine if wastes exhibit a characteristic of a hazardous waste. Testing laboratories shall be able to perform SW-846 test methods; including all respective quality assurance/quality control (QA/QC) procedures and meet DEQ laboratory certification requirements.
- ii. Collect sufficient information to determine waste incompatibilities, container specifications, and shipping names.
- iii. Meet applicable federal, state, and local regulatory requirements.
- iv. Determine the hazardous characteristics of each waste stream and contents of each container prior to storage.
- v. Identify waste analysis parameters and the rationale for using a specific analytical parameter based on the physical as well as the chemical characteristics of each waste. Only analyses relevant to the hazardous waste characteristics for a particular waste are necessary. In some cases, NNSY will have to test for specific constituents. SDS or other manufacturer's information may be used for the characterization of unused commercial products in their original containers.

Where process knowledge has been gathered, analytical requirements are waived so long as the process generating the waste remains unchanged and analytical results from previous work processes are provided for characterization.

Restricted hazardous wastes are those wastes that are restricted from land disposal unless the wastes meet certain specific conditions or treatment standards and are defined in 40 CFR § 268 Subpart C. Waste bearing these waste codes, or soil or debris contaminated with these waste materials, must meet treatment standards

specified in 40 CFR § 268 Subpart D or other conditions specified in Subpart C prior to land disposal. The information collected on the documentation is used to create a unique record of each waste profile.

For mixed waste, sampling and analysis on surrogate (identical to the waste but non-radioactive) materials is allowed where a representative sample can be constructed to determine if the waste is hazardous.

II.B.7. NOTIFICATION, CERTIFICATION, AND RECORD-KEEPING REQUIREMENTS, OPERATIONAL RECORDS

II.B.7.a. Operating Record Documentation for Waste Analysis

The operator of each permitted unit will maintain an operating record for hazardous and mixed wastes stored at the permitted units. This operating record includes an account for all wastes received and removed from the buildings, and will be maintained until closure of the facility per Module II. The operating record will contain the following information:

- Records and results of waste analyses and waste determinations performed, and;
- Monitoring, testing, or analytical data, and corrective action where required.

II.B.7.b. Retention of Generator Notices and Certifications

NNSY reviews and maintains manifests and associated LDR records, including generator notices and certifications at the facility.

II.B.7.c. Notification and Certification Requirements for Treatment Facilities

The permitted units are for storage only and are not treatment facilities; therefore, this section does not apply.

II.B.7.d. Notification and Certification Requirements for Land Disposal Facilities

The permitted units are for storage only and are not land disposal facilities; therefore, this section does not apply.

II.B.7.e. Waste Shipped to Subtitle D Facilities

No waste stored at the permitted units will be shipped to a Subtitle D Facility.

II.B.7.f. Recyclable Materials

The permitted units at NNSY are for storage of hazardous waste and mixed waste. NNSY may occasionally recycle used batteries or other recyclable hazardous waste; however, this activity is not done in a manner constituting disposal in accordance with 40 CFR § 266.20(b). Therefore, notices and certifications are not required.

II.B.7.g. Record-Keeping

The permitted units are operated to store wastes. NNSY will (1) determine if the waste is restricted from land disposal subject to LDR and will keep documentation of that determination and, (2) maintain documentation to indicate where restricted LDR wastes were treated, stored, and/or disposed. NNSY may use process knowledge to determine compliance with LDR. Records of all data used to make this determination will be retained. Any analytical data used to make this determination will likewise be retained on-site, per Condition I.J of this permit.

NNSY managing any waste subject to LDR will demonstrate that all notifications and certifications, submitted by waste generators or other treatment, storage, and/or disposal facilities are reviewed and maintained as part of the operating record until closure of the facility, in accordance with the record-keeping requirements of 40 CFR § 264.73.

All mixed waste received at the MWSU from off-site generating locations must be sufficiently characterized before being stored, regardless of generating location. This procedure to characterize a waste includes identification of constituents that cause the waste to require further treatment prior to land disposal. LDR notification forms are associated with each waste generated off-site, along with the Uniform Hazardous Waste Manifest.

Hazardous waste or mixed waste stored at the permitted units will be shipped to approved, treatment, storage, or disposal facilities using appropriate manifest documentation that has been correctly completed and signed. LDR notification forms are associated with each manifest. The LDR notification for both inbound waste to be stored at the permitted units and outbound waste shipped for treatment, further storage, or disposal, includes LDR-related details and information developed during waste characterization.

II.B.7.h. Waste Shipped to Subtitle C Facilities

All hazardous waste and mixed waste stored at the permitted units will be shipped to approved treatment, storage, or disposal facilities using appropriate manifest documentation that has been correctly completed and signed. LDR notification forms are associated with each manifest.

II.B.8. REQUIREMENTS PERTAINING TO THE STORAGE OF RESTRICTED WASTES

NNSY managing any waste subject to LDR will demonstrate that (1) the waste is stored in containers on-site and, (2) such storage is solely for the purpose of accumulating sufficient quantities of waste to facilitate proper treatment, recovery, or disposal.

If restricted wastes are stored beyond one year, NNSY will provide proof, in the event of an enforcement action, that such storage is for allowable reasons. Prior to one year, DEQ bears the burden of proof required to show the prohibited wastes are being stored in error.

Storage requirements do not apply to restricted wastes that:

- Meet applicable treatment standards
- Have received a nationwide variance
- Have received an exemption under 40 CFR § 268.6
- Have received a case-by-case extension under 40 CFR § 268.5

II.B.8.a. Restricted Waste Stored in Containers

The permitted units are for the storage of hazardous waste in containers. Each container will be clearly marked to identify its contents and the date each period of accumulation begins.

II.B.8.b. Restricted Wastes Stored in Tanks

The permitted units are for the storage of hazardous waste in containers; therefore, this section does not apply.

II.B.8.c. Storage of PCB Waste

The facility is designed to meet the requirements of 40 CFR § 761.65 (b). All PCB waste stored at the permitted units will be shipped to approved treatment, storage, or disposal facilities using appropriate manifest documentation that has been correctly completed and signed after following appropriate storage procedures set forth in this permit.

II.B.8.d. Storage of Mixed Waste

If any mixed waste requires storage in excess of one calendar year from the date

of first acceptance at the MWSU, a written notification will be made to DEQ prior to exceeding the one year storage limitation for any waste placed in the MWSU. This notification shall include:

- The names and quantity of each type of waste that will exceed the one year storage limitation;
- Identification of off-site treatment facilities being evaluated that could treat the mixed wastes being stored greater than one calendar year;
- A schedule of milestones for obtaining off-site treatment capabilities (e.g., confirmation that the off-site treatment facility can and will treat the targeted mixed wastes, obtaining a contract with the off- site treatment facility, and projected shipment date of targeted mixed wastes to the off-site treatment facility).

II.B.8.e. Exemptions, Extensions, and Variances to Land Disposal Restrictions

NNSY does not request exemptions, extensions, and variances to LDR.

Appendix II.B-1: 49 CFR § 177 Subpart C – Segregation and Separation Chart of Hazardous Materials (Table II.B-1 Segregation Table for Hazardous Materials) A Method for Determining the Compatibility of Hazardous Wastes (Hatayama, et al, 1980.)

Table II.B-1: 49 CFR § 177 Segregation Table for Hazardous Materials

Class or division		Notes	1.1 1.2	1	1	2	2	2	2	2.3 gas zone A	2.3 gas Zone B	3	4	4	4	5	5	6.1 liquids PG I zone A	7	8 liquids only
Explosives	1.1 and 1.2	A	*	*	*	*	*	X	X	X	X	X	X	X	X	X	X	X	X	X
Explosives	1.3		*	*	*	*	*	X		X	X	X		X	X	X	X	X		X
Explosives	1.4		*	*	*	*	*	O		O	O	O		O				O		O
Very insensitive explosives	1.5	A	*	*	*	*	*	X	X	X	X	X	X	X	X	X	X	X	X	X
Extremely insensitive explosives	1.6		*	*	*	*	*													
Flammable gases	2.1		X	X	O	X				X	O							O	O	
Non-toxic, non-flammable gases	2.2		X			X														
Poisonous gas Zone A	2.3		X	X	O	X		X				X	X	X	X	X	X			X
Poisonous gas Zone B	2.3		X	X	O	X		O				O	O	O	O	O	O			O
Flammable liquids	3		X	X	O	X				X	O					O		X		
Flammable solids	4.1		X			X				X	O							X		O
Spontaneously combustible materials	4.2		X	X	O	X				X	O							X		X
Dangerous when wet materials	4.3		X	X		X				X	O							X		O
Oxidizers	5.1	A	X	X		X				X	O	O						X		O
Organic peroxides	5.2		X	X		X				X	O							X		O
Poisonous liquids PG I Zone A	6.1		X	X	O	X		O				X	X	X	X	X	X			X
Radioactive materials	7		X			X		O												
Corrosive liquids	8		X	X	O	X				X	O		O	X	O	O	O	X		

Instructions for using the segregation table for hazardous materials are as follows:

- The absence of any hazard class or division or a blank space in the table indicates that no restrictions apply.
- The letter “X” in the table indicates that these materials may not be loaded, transported, or stored together in the same transport vehicle or storage facility during the course of transportation.
- The letter “O” in the table indicates that these materials may not be loaded, transported, or stored together in the same transport vehicle or storage facility during the course of transportation unless separated in a manner that, in the event of leakage from packages under conditions normally incident to transportation commingling of hazardous materials would not occur. Notwithstanding the methods of separation employed, Class 8 (corrosive) liquids may not be loaded above or adjacent to Class 4 (flammable) or Class 5 (oxidizing) materials; except that shippers may load truckload shipments of such materials together when it is known that the mixture of contents would not cause a fire or a dangerous evolution of heat or gas.
- The “*” in the table indicates segregation among different Class 1 (explosive) materials is governed by the compatibility table.
- The note “A” in the second column of the table means that, notwithstanding the requirements of the letter “X”, ammonium nitrate (UN 1942) and ammonium nitrate fertilizer may be loaded or stored with Division 1.1 (explosive) or Division 1.5 materials.

When the table in 49 CFR § 172.101 or 49 CFR § 172.402 requires a package to bear a subsidiary hazard label, segregation appropriate to the subsidiary hazard must be applied when that segregation is more restrictive than required by the primary hazard. However, hazardous materials of the same class may be stowed together without regard to segregation required for any secondary hazard, if the materials are not capable of reacting dangerously with each other and causing combustion or dangerous evolution of; heat, evolution of flammable, poisonous or asphyxiant gases, or formation of corrosive or unstable materials.

The DOT classes of hazardous materials stored at the Hazardous Waste Storage Unit at NNSY are:

- DOT Class 2 (Gases)
- DOT Class 3 (Flammable Liquids)
- DOT Class 4 (Flammable Solids, Spontaneously Combustible Materials and

Dangerous- When-Wet Materials)

- DOT Class 5 (Oxidizers and Organic Peroxides)
- DOT Class 6 (Poisonous Liquids)
- DOT Class 8 (Corrosive Liquids)
- DOT Class 9 (Miscellaneous Hazardous Materials)

The DOT classes of hazardous materials stored at the Mixed Waste Storage Unit at NNSY are:

- DOT Class 3 (Flammable Liquids)
- DOT Class 5 (Oxidizers and Organic Peroxides)
- DOT Class 6 (Poisonous Liquids)
- DOT Class 7 (Materials)
- DOT Class 8 (Corrosive Liquids)
- DOT Class 9 (Miscellaneous Hazardous Materials)

Figure II.B-1: Hazardous Waste Characterization Form

PIN:

Norfolk Naval Shipyard Waste Stream Characterization Form

A. Waste process and description			
Waste description (including chemical/physical description):			
Process generating the waste:			
B. Waste stream determination			
Waste determination based on:			Date:
<input type="checkbox"/> User knowledge (Process evaluation, SDSs, and interviews) <input type="checkbox"/> Waste analysis (List all sampling dates and attach analytical results)			Date:
Is the waste a "solid waste" according to §261.2?			<input type="checkbox"/> Yes <input type="checkbox"/> No
<i>If no, specify exclusion or exemption by regulatory citation and describe:</i>			
Is the solid waste excluded under §261.4 or exempt from regulation as a hazardous waste?			<input type="checkbox"/> Yes <input type="checkbox"/> No
<i>If yes, specify exclusion or exemption by regulatory citation and describe:</i>			
Is the waste a listed hazardous waste? (Detail rationale, as necessary)			<input type="checkbox"/> Yes <input type="checkbox"/> No
F-listed per §261.31			<input type="checkbox"/> Yes <input type="checkbox"/> No
K-listed per §261.32			<input type="checkbox"/> Yes <input type="checkbox"/> No
P-listed per §261.33(e)			<input type="checkbox"/> Yes <input type="checkbox"/> No
U-listed per §261.33(f)			<input type="checkbox"/> Yes <input type="checkbox"/> No
Is the waste a characteristic hazardous waste? (Detail rationale, as necessary)			<input type="checkbox"/> Yes <input type="checkbox"/> No
Ignitable (D001) per §261.21			<input type="checkbox"/> Yes <input type="checkbox"/> No
Corrosive (D002) per §261.22			<input type="checkbox"/> Yes <input type="checkbox"/> No
Reactive (D003) per §261.23			<input type="checkbox"/> Yes <input type="checkbox"/> No
Toxic (D004 – D043) per §261.24 (select constituents below)			<input type="checkbox"/> Yes <input type="checkbox"/> No
Metals (mg/L) D004 <input type="checkbox"/> Arsenic (5.0) D005 <input type="checkbox"/> Barium (100.0) D006 <input type="checkbox"/> Cadmium (1.0) D007 <input type="checkbox"/> Chromium (5.0) D008 <input type="checkbox"/> Lead (5.0) D009 <input type="checkbox"/> Mercury (0.2) D010 <input type="checkbox"/> Selenium (1.0) D011 <input type="checkbox"/> Silver (5.0)	Volatiles (mg/L) D018 <input type="checkbox"/> Benzene (0.5) D019 <input type="checkbox"/> Carbon Tetrachloride (0.5) D021 <input type="checkbox"/> Chlorobenzene (100.0) D022 <input type="checkbox"/> Chloroform (6.0) D028 <input type="checkbox"/> 1,2-Dichloroethane (0.5) D029 <input type="checkbox"/> 1,1-Dichloroethylene (0.7) D035 <input type="checkbox"/> Methyl Ethyl Ketone (200.0) D039 <input type="checkbox"/> Tetrachloroethylene (0.7) D040 <input type="checkbox"/> Trichloroethylene (0.5) D043 <input type="checkbox"/> Vinyl Chloride (0.2)	Semi-Volatiles (mg/L) D023 <input type="checkbox"/> o-Cresol (200.0) D024 <input type="checkbox"/> m-Cresol (200.0) D025 <input type="checkbox"/> p-Cresol (200.0) D026 <input type="checkbox"/> Cresol - total (200.0) D027 <input type="checkbox"/> 1,4-Dichlorobenzene (7.5) D030 <input type="checkbox"/> 2,4-Dinitrotoluene (0.13) D032 <input type="checkbox"/> Hexachlorobenzene (0.13) D033 <input type="checkbox"/> Hexachlorobutadiene (0.5) D034 <input type="checkbox"/> Hexachloroethane (3.0) D036 <input type="checkbox"/> Nitrobenzene (2.0) D037 <input type="checkbox"/> Pentachlorophenol (100.0) D038 <input type="checkbox"/> Pyridine (5.0) D041 <input type="checkbox"/> 2,4,5-Trichlorophenol (400.0) D042 <input type="checkbox"/> 2,4,6-Trichlorophenol (2.0)	Pesticides/Herbicides (mg/L) D020 <input type="checkbox"/> Chlordane (0.03) D012 <input type="checkbox"/> Endrin (0.02) D031 <input type="checkbox"/> Heptachlor + epoxide (0.008) D013 <input type="checkbox"/> Lindane (0.4) D014 <input type="checkbox"/> Methoxychlor (10.0) D015 <input type="checkbox"/> Toxaphene (0.5) D016 <input type="checkbox"/> 2,4-D (10.0) D017 <input type="checkbox"/> 2,4,5-TP (Silvex) (1.0)
Is the waste PCB-contaminated?			<input type="checkbox"/> Yes <input type="checkbox"/> No
<i>If yes, verify RCRA status at §261.8. (TSCA regulations may apply.)</i>			
RCRA waste determination:			
<input type="checkbox"/> Hazardous with waste codes _____ <input type="checkbox"/> Nonhazardous <input type="checkbox"/> Exempt because _____ <input type="checkbox"/> Used oil <input type="checkbox"/> Universal waste			

Updated October 4, 2019

PIN

Norfolk Naval Shipyard Waste Stream Characterization Form (continued)

C. Waste storage, treatment, and disposal		
Specific description of waste management from generation point to final disposition:		
Approximate waste generation rate:		
Are land disposal restrictions (LDR) applicable? If yes, specify treatability group: <input type="checkbox"/> Wastewater <input type="checkbox"/> Nonwastewater	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Are UHCs present above treatment standards? <i>[Only applicable to certain characteristically hazardous waste codes specified by regulation.]</i> If yes, specify UHCs:	<input type="checkbox"/> Yes <input type="checkbox"/> No	
DOT shipping name:		
Environmental Manager's Signature	Printed/typed name & title	Date

IMPORTANT: Attach all supporting documentation (e.g., SDSs, laboratory analysis, generator knowledge, etc.) to this waste stream determination.

CLIN:

WD Section:

Storage Location:

Source Code:

Form Code:

Waste Characterization Review

I have reviewed the process generating this waste and have found, to the best of my knowledge, that no changes have been made to materially affect the waste generated (e.g., require additional or elimination of codes). *If this is not the case, then a new Waste Stream Characterization Form must be completed.*

Reviewer's signature	Printed/typed name & title	Date

Source: Adapted by McCoy and Associates, Inc.

Updated October 4, 2019

Figure II.B-2: Mixed Waste Stream Characterization Forms

Waste Characterization Parameters

WASTE STREAM #	WASTE STREAM NAME	WASTE STREAM DESCRIPTION	EPA WASTE CODES
MW1	Mixed Waste Requiring Organic/ Characteristic Treatment	Debris, items, particulates, sediments and liquids that may contain asbestos	D001, D002, D003, D004, D005, D006, D007, D008, D009, D010, D011, D012, D013, D014, D015, D016, D017, D018, D019, D020, D021, D022, D023, D024, D025, D026, D027, D028, D029, D030, D031, D032, D033, D034, D035, D036, D037, D038, D039, D040, D041, D042, D043, F001, F002, F003, F005, F007
MW2	Mixed Waste For Macroencapsulation Treatment	Lead, leaded alloys, brass and bronze items, cadmium plated equipment and other debris type waste. May contain asbestos and/or PCBs that are amenable for direct disposal.	D004, D005, D006, D007, D008, D009, D010, D011
MW3	Mixed Waste Containing PCBs	PCB contaminated debris, items, particulates, sediments and liquids that may contain asbestos	D001, D002, D003, D004, D005, D006, D007, D008, D009, D010, D011, D012, D013, D014, D015, D016, D017, D018, D019, D020, D021, D022, D023, D024, D025, D026, D027, D028, D029, D030, D031, D032, D033, D034, D035, D036, D037, D038, D039, D040, D041, D042, D043, F001, F002, F003, F005, F007

Waste Profile Sheets.
MW1

Norfolk Naval Shipyard
Nuclear Engineering and Planning Department
Mixed Waste Engineering Branch
Building M32, 2nd Floor
Portsmouth, VA 23709-5000

State/EPA ID# VA1170024813

Technical Contact: Mixed Waste Branch Head Phone (757) 396-9605

Waste Stream Name: Mixed Waste Requiring Organic/Characteristic Treatment

A Waste Codes: D001, D002, D003, D004, D005, D006, D007, D008, D009, D010, D011, D012, D013, D014, D015, D016, D017, D018, D019, D020, D021, D022, D023, D024, D025, D026, D027, D028, D029, D030, D031, D032, D033, D034, D035, D036, D037, D038, D039, D040, D041, D042, D043, F001, F002, F003, F005, F007

Physical State: ☒ Solid ☐ Liquid ☐ Semisolid ☐ Gas ☐ Mode of collection ☐ Bulk ☒ Drum

Specific Gravity (For Bulk Liquid Only): N/A Flash Point: N/A pH: N/A

Process Generating Waste: ☐ Expired Shelf ☐ Old/Offspec ☒ Industrial Process (see notes)

Chemical Composition: (Range of concentrations, by weight)

0.0 - 1.0 %	Arsenic
0.0 - 1.0 %	Barium (in the form of barium oxides)
0.0 - 1.0 %	Cadmium (in the form of cadmium oxides)
0.0 - 5.0 %	Chromium (in the form of chromium oxides or potassium chromate)
0.0 - 5.0 %	Lead (in the form of lead oxides)
0.0 - 1.0 %	Mercury (elemental or alloyed or mercuric nitrate)
0.0 - 1.0 %	Selenium (in the form of selenium oxides)
0.0 - 1.0 %	Silver (in the form of silver oxides or silver nitrate)
0.0 - 100%	Alcohol (Isopropyl, Denatured)
0.0 - 5.0 %	F-listed Solvents
0.0 - 0.05 %	Hydrochloric, Nitric, Sulfuric, Formic, Citric and other Acids
0.0 - 5.0 %	Halogenated Organic Compounds
0.0 - 5.0 %	Non-halogenated Organic Compounds
0.0 - 5.0 %	Sodium Hydroxide
0.0 - 7.0 %	Cyanide
0.0 - 49 ppm	PCBs
0.0 - 5.0 %	Asbestos
80.0 - 99.9 %	Inert, non-hazardous ingredients (paper, cloth, plastic, silicates, epoxy resins, ferrous and non ferrous alloys and sulfates, water, cutting fluids, lubricating oils etc.)
0.0 - 20.0%	Non-hazardous paint remover waste

Additional Description: N/A

Is this waste restricted from landfill? ☒ yes ☐ no

Notes: (1) Debris, items, particulates, sediments and liquids that may contain asbestos. May contain any combination of EPA hazardous waste codes listed above and no regulated PCBs.

DOT Containers: All wastes placed in sealed internal packages contained in Performance-Oriented Packaging per 49 CFR 178.500. Compatibility within each DOT container maintained per 49 CFR 177.

DOT Hazard Class: 3, 5, 6, 7, 8, 9

MW2

Norfolk Naval Shipyard
Nuclear Engineering and Planning Department
Mixed Waste Engineering Branch
Building M32, 2nd Floor
Portsmouth, VA 23709-5000

State/EPA ID# VA1170024813

Technical Contact: Mixed Waste Branch Head Phone (757) 396-9605

Waste Name: Mixed Waste for Macroencapsulation Treatment

EPA HAZ Waste No.: D004, D005, D006, D007, D008, D009, D010, D011

Physical State: ☒ Solid ☐ Liquid ☐ Semisolid ☐ Gas ☐ Mode of collection ☐ Bulk ☒ Drum

Specific Gravity (For Bulk Liquid Only): N/A Flash Point: N/A pH: N/A

Process Generating Waste: ☐ Expired Shelf ☐ Old/Offspec ☒ Industrial Process (see notes)

Chemical Composition: (Range of concentrations, by weight)

0.0 - 1.0 %	Arsenic
0.0 - 1.0 %	Barium (elemental or alloyed)
0.0 - 1.0 %	Cadmium (elemental or alloyed)
0.0 - 1.0 %	Chromium (elemental or alloyed)
0.0 - 25.0 %	Lead (elemental or alloyed)
0.0 - 1.0 %	Mercury (elemental or alloyed)
0.0 - 1.0 %	Silver (elemental or alloyed)
0.0 - 1.0 %	Selenium (elemental or alloyed)
69.0 - 99.9 %	Inert, non-hazardous ingredients (ferrous alloys, plastic, paper, cloth etc.)
0.0 - 5.0 %	Asbestos
0.0 - 10,000 ppm	PCBs (amenable for direct disposal)

Additional Description: N/A

Is this waste restricted from landfill? ☒ yes ☐ no

Notes: (1) Waste such as lead, leaded alloys, brass and bronze items, cadmium plated equipment and other debris type waste as defined in 40 CFR 268.45. Waste may contain asbestos. Waste may contain any combination of EPA waste codes listed above and PCBs amenable for direct disposal.

DOT Containers: All wastes placed in sealed internal packages contained in Performance-Oriented Packaging per 49 CFR 178.500. Compatibility within each DOT container maintained per 49 CFR 177.

DOT Hazard Class: 3, 5, 6, 7, 8, 9

MW3

Norfolk Naval Shipyard
Nuclear Engineering and Planning Department
Mixed Waste Engineering Branch
Building M32, 2nd Floor
Portsmouth, VA 23709-5000

State/EPA ID# VA1170024813

Technical Contact: Mixed Waste Branch Head Phone (757) 396-9605

Waste Name: Mixed Waste Containing PCBs

EPA Waste Codes: D001, D002, D003, D004, D005, D006, D007, D008, D009, D010, D011, D012, D013, D014, D015, D016, D017, D018, D019, D020, D021, D022, D023, D024, D025, D026, D027, D028, D029, D030, D031, D032, D033, D034, D035, D036, D037, D038, D039, D040, D041, D042, D043, F001, F002, F003, F005, F007

Physical State: ☒ Solid ☐ Liquid ☐ Semisolid ☐ Gas ☐ Mode of collection ☐ Bulk ☒ Drum

Specific Gravity (For Bulk Liquid Only): N/A Flash Point: N/A pH: N/A

Process Generating Waste: ☐ Expired Shelf ☐ Old/Offspec ☒ Industrial Process (see notes)

Chemical Composition: (Range of concentrations, by weight)

1 - 156,000 ppm	PCBs
0.0 - 1.0 %	Arsenic
0.0 - 1.0 %	Barium (in the form of barium oxides)
0.0 - 1.0 %	Cadmium (in the form of cadmium oxides)
0.0 - 5.0 %	Chromium (in the form of chromium oxides or potassium chromate)
0.0 - 5.0 %	Lead (in the form of lead oxides)
0.0 - 1.0 %	Mercury (elemental or alloyed or mercuric nitrate)
0.0 - 1.0 %	Selenium (in the form of selenium oxides)
0.0 - 1.0 %	Silver (in the form of silver oxides or silver nitrate)
0.0 - 100%	Alcohol (Isopropyl, Denatured)
0.0 - 5.0 %	F-listed Solvents
0.0 - 0.05 %	Hydrochloric, Nitric, Sulfuric, Formic, Citric and other Acids
0.0 - 5.0 %	Halogenated Organic Compounds
0.0 - 5.0 %	Non-halogenated Organic Compounds
0.0 - 5.0 %	Sodium Hydroxide
0.0 - 7.0 %	Cyanide
0.0 - 5.0 %	Asbestos
80.0 - 99.9 %	Inert, non-hazardous ingredients (paper, cloth, plastic, silicates, epoxy resins, ferrous and non ferrous alloys and sulfates, water, cutting fluids, lubricating oils etc.)
0.0 - 20.0%	Non-hazardous paint remover waste

Additional Description: N/A

Is this waste restricted from landfill? ☒ yes ☐ no

Notes: (1) PCB contaminated debris, items, particulates, sediments and liquids that may contain asbestos. May contain any combination of EPA waste codes listed above and regulated PCBs.

Virginia Department of Environmental Quality
Office of Financial Responsibility and Waste Programs
Norfolk Naval Shipyard

EPA ID No. VA1170024813
Expiration Date: XX XX, 203X

DOT Containers: All wastes placed in sealed internal packages contained in Performance-Oriented Packaging per 49 CFR 178.500. Compatibility within each DOT container maintained per 49 CFR 177.

DOT Hazard Class: 3, 5, 6, 7, 8, 9

TABLE II.B-2: WASTE STREAM PROFILE DESCRIPTION

Waste Stream Profile Description for Norfolk Naval Ship Yard	
Profile Description	Hazardous Waste Codes
Metals	
Arsenic	D004
Barium	D005
Cadmium	D006
Chromium	D007
Lead	D008
Mercury	D009
Selenium	D010
Silver	D011
Spent Halogenated Solvents - Degreasing	
Tetrachloroethylene	F001, F002
trichloroethylene	F001, F002
methylene chloride	F001, F002
1,1,1-trichloroethane	F001, F002
carbon tetrachloride	F001, F002
chlorinated fluorocarbons	F001, F002
chlorobenzene	F002
1,1,2-trichloro-1,2,2-trifluoroethane	F002
ortho-dichlorobenzene	F002
trichlorofluoromethane	F002
1,1,2-trichloroethane	F002
Spent Non-Halogenated Solvents - Degreasing	
Xylene	F003
acetone	F003
ethyl acetate	F003
ethyl benzene	F003
ethyl ether	F003
methyl isobutylketone	F003
n-butyl alcohol	F003
cyclohexanone	F003
methanol	F003
Toluene	F005
methyl ethyl ketone	F005
carbon disulfide	F005
isobutanol	F005

Waste Stream Profile Description for Norfolk Naval Ship Yard	
Profile Description	Hazardous Waste Codes
pyridine	F005
benzene	F005
2-ethoxyethanol	F005
2-nitropropane	F005
Acids and Alkalis (Corrosives)	
Ammonium Hydroxide Solution (> 10% < 35% pH > 12.5 Liq)	D002
Chromic Acid Solution Alodine 1200 pH < 2 Liq	D002, D007
Hydrochloric Acid pH < 2 Liq	D002
Hydrochloric Acid Solution - Marine /	D002, D006
Mineral Deposit Remover pH < 2 Liq	D007
Iridite 80 pH < 2 Liq	D002, D007
Lithium Hydroxide pH > 12.5 Liq	D002
Metals in Sulfuric & Nitric Acid pH < 2 Liq	D002, D006, D007, D010, D011
Monoethanolamine pH > 12.5 Liq	D002
Nitric Acid Reagent, Over 50% Oxidizer pH < 2 Liq	D001, D002
Nitric Acid, ACS pH < 2 Liq	D002
Potassium Carbonate pH > 12.5 Liq	D002
Potassium Hydroxide pH > 12.5 Liq	D002
Presto Black BST4 pH < 2 Liq	D002, D010
Rags C/W Acid Solution pH < 2 Liq	D002
Rags C/W Alkaline Solution pH > 12.5 Liq	D002
Sodium Hydroxide Solution pH > 12.5 Liq	D002
Solder Flux pH < 2 Liq (Hydrochloric Acid)	D002
Sulfuric Acid < 51 Percent pH < 2 Liq	D002
Water Analysis Titrets pH < 2 Liq	D002
Adhesives, Sealants, Coatings, Resins	
Adhesive , Sealants, Coatings, Resins - Flammable, C/W Toxic Metals/MEK	D001, D005, D007, D011, D035
Adhesive, Sealants, Coatings, Resins, W/ Chromium; Liq; Solid	D007
Coating Aluminum Solid (Flammable Solid)	D001
Epoxy Resin Corrosivity > 6.35 mm/yr Liq	D002
Norox MEKP-9 Organic Peroxide Liq	D001, D035
Aerosols	

Waste Stream Profile Description for Norfolk Naval Ship Yard	
Profile Description	Hazardous Waste Codes
Flammable Aerosol	D001
Flammable Aerosol (Contains MEK)	D001, D035
Cleaning Compounds	
Cleaning Compound pH > 12.5 Liq	D002
Cleaning Compound pH < 2 Liq (Nitric Acid)	D002
Cleaning Compound Liq (Organic Peroxide)	D001, D002
Cleaning Compound Oxidizer Solid (Sodium Perborate Monohydrate)	D001
Cleaning Solvent - Flammable	D001
Corrosion Preventive Compounds	
Corrosion Inhibitor Oxidizer Liq (Sodium Nitrite)	D001
Corrosion Inhibitor, Sodium Hydroxide pH > 12.5 Liq	D002
Corrosion Preventive Compound FP > 73 < 140 Liq	D001
Corrosion Preventive Compound W/ Tetrachloroethylene FP > 73 < 140 Liq	D001, D039, F002
Corrosion Resistant Coating W/ Chromic Acid pH < 2 Liq	D002, D007
Cylinders	
Cylinder WI Propane	D001
Grease, Lubricants, and Lube Oils	
Graphite Lubricant in Alcohol FP < 73 Liq	D001
Oil and Water Liq (Cadmium, Chromium)	D006, D007
Oil C/W Chloroform, Xylene, Toluene Liq	D022, F003, F005
Oils C/W Solvents FP > 73 < 140 Liq (Tetrachloroethylene)	D001, D039
Lab Waste	
Acid Neutralization Test Waste pH > 12.5 Flammable Liq	D001, D002, D005
Chlor-D-Tect Chlorine/ Halogen Test Kit, USED, pH < 2 Liq	D002
Chrome and Nickel Plating Test Waste pH < 2 Liq	D002, D004, D007, D008, D011
COD Sulfuric Acid, Chromate, Mercuric Sulfate pH < 2 liq	D002, D007, D009, D011
Concentrated Hydrazine Color Reagent, FP < 73 pH < 2 Liq	D001, D002
Cyanide Plating Waste, 6.1 Poison Liq	D007, D011, F007

Waste Stream Profile Description for Norfolk Naval Ship Yard	
Profile Description	Hazardous Waste Codes
Cyanide Plating Waste, 6.1 Poison pH > 12.5 Liq	D002, D007, D011, F007
Cyanide Test Waste pH < 2 Liq	D002
Lab Chloride Reagent Test Waste, pH < 2 Liq	D002, D011
Lab TCLP Waste W/ Metals Liq pH<2	D002, D004, D005, D006, D007, D008, D009, D010, D011
Lab Waste for Lab Packing pH < 2 Liq (Provide waste description in Additional Information Line on Non-Bulk Form)	D002
Lab Waste for Lab Packing FP < 73 Liq (Provide waste description in Additional Information Line on Non-Bulk Form)	D001, D022
Lab Waste for Lab Packing, Standards, pH < 2, W/ Metals Liq	D002, D004, D005, D006, D007, D008
Mercuric Nitrate in Nitric Acid Diluted pH > 2 < 12.5 Liq	D009
Mercuric Nitrate in Nitric Acid Diluted pH < 2 Liq	D002, D009, D011
Mercury Test Waste pH < 2 Liq	D002
Metals in Sulfuric & Nitric Acid pH < 2 Liq	D002, D006, D007, D010, D011
Nitrate Phosphate Test Waste pH < 2 Liq (Nitric, Sulfuric, and Hydrochloric Acid)	D002
Nitric Acid Etching Waste pH < 2 Liq	D002, D007
Oxalic Acid Reagent pH < 2, FP > 73 < 140 Liq	D001, D002
Perchloric Acid Titration Waste pH < 2 Liq	D002, D007
Silica Test Waste Molybdate Reagent pH < 2 Liq	D002
Silver Nitrate in Nitric Acid Liq	D011
Silver Nitrate Oxidizer Solid	D001, D011
Solvent Contaminated Oil FP < 73 Liq	D001, D022, F003, F005
Sulfuric Acid C/W Metals pH < 2 Liq	D002, D006, D007, D010
Sulfuric Acid and Phosphoric Acid pH < 2 Liq	D002
Sulfuric Acid, Sodium Persulfate pH < 2 Liq	D002
Test Waste Containing Cadmium Liq	D006
Paints and Related Material	
Antifouling Paint FP > 73 < 140 Liq	D001
Deck Coating Paint Liq (Contains Amines)	D002

Waste Stream Profile Description for Norfolk Naval Ship Yard	
Profile Description	Hazardous Waste Codes
Enamel Paint - Flammable	D001
Epoxy Paint - Flammable, C/W Toxic Metals Liq	D001, D005
Epoxy Paint and Thinner FP > 73 < 140 Liq	D001
Metal Wash Primer FP < 73 pH < 2 Liq	D001, D002
Methyl Ethyl Ketone Used FP < 73 Liq	D001, D035
Mineral Spirits FP > 73 < 140 Liq	D001, D018
Paint FP < 73 and Corrosive Liq (Contains Amines)	D001, D002
Paint FP > 73 < 140 and Corrosive Liq (Contains Amines)	D001, D002
Paint W/ Chromium Liq	D007
Paint and Thinner - Flammable	D001, D005
C/W Toxic Metals/MEK Liq	D035, F003, F005
Paint Chips And / Or Debris	D005, D006
C/W Toxic Metals Solid	D007, D008
Paint Containing MEK Liq (Contains Amines)	D002, D035
Paint- Flammable, C/W Toxic	D001, D005
Metals/MEK Liq	D007, D035
Paint FP > 73 < 140 DOT Corrosive Liq	D001
Paint Remover Liq HW TOXIC Bay E	D007
Paint Waste Debris FP < 73 Liq	D001
Teflon Paint One Coat Green #850G-204 pH < 2 Liq	D002, D007
Toluene FP < 73 Liq (New/ Unopened)	U220
Photographic Chemicals	
Phosphoric Acid, Sodium Persulfate Oxidizer pH < 2 Liq	D001, D002
Phosphoric Acid Solution pH < 2 Liq	D002, D006, D007
Photographic Chemicals C/W Citric Acid Corrosivity > 6.35 mm/yr Liq	D002, D011
Photographic Chemicals pH < 2 Liq	D002
Plating Chemicals and Solution	
Ammonium Persulfate Oxidizer Liq (Waste Etching Solution)	D001
Ammonium Persulfate Oxidizer Liq (Waste Etching Solution)	D001, D007
Plating Solution pH > 12.5 Liq	D002
Plating Solution Containing Silver, pH < 11 Liq	D011
Waste Etching Solution pH < 2 Liq (Sulfuric Acid)	D002
Waste Plating Solution pH < 2 Liq	D002, D007, D008

Waste Stream Profile Description for Norfolk Naval Ship Yard	
Profile Description	Hazardous Waste Codes
Nitric Acid Etching Solution FP <73 Liq	D001, D002
Sodium Dichromate Solid	D007
Polychlorinated Biphenyls (PCB)	
PCB Articles < 50 PPM C/W Metals Solid	D005, D006, D007, D008
PCB Articles < 50 PPM C/W Metals, Asbestos, Solid	D005, D006, D007, D008
PCB Debris < 50 PPM C/W Barium, Cadmium, Chromium, Lead, Solid	D005, D006, D007, D008
PCB Debris 500 PPM or Greater C/W Metals Solid	D005, D006, D007, D008
PCB Debris 50-499 ppm C/W Metals, Asbestos Solid	D005, D006, D007, D008
PCB Debris < 50 PPM C/W Metals Solid	D007
PCB Debris < 50 PPM, Asbestos C/W Metals Solid	D007
PCB Debris < 50 PPM C/W Lead Solid	D008
PCB Debris < 50 PPM C/W Asbestos and Lead Solid	D008
Solvents	
Acetone FP < 73 Liq	D001, F003
Acetone FP < 73 Liq (New / Unopened)	U002
Alcohols Toxic FP < 73 Liq (Methanol, Ethanol)	D001
Isopropyl Alcohol FP < 73 Liq	D001
Methyl Alcohol Methanol FP < 73 Liq	D001, F003
Naphtha Aliphatic FP < 73 Liq	D001
Solvents FP < 73 Liq (Notify C106 prior to using - Please provide waste description in additional info line on Non-Bulk Form)	D001, F003, F005
Solvents FP > 73 < 140 Liq (Notify C106 prior to using - Please provide waste description in additional info line on Non-Bulk Form)	D001
MEK and MIK FP < 73 Liq	D001, D035
Trichlorotrifluoroethane Liq	F002
Trichloroethylene Liq (New / Unopened)	U228
Other Various Waste	
Activated Carbon New Spontaneously Combustible Solid	D001, D003
Ammonia Inhalation Solution FP < 73 pH > 12.5 Liq	D001, D002

Waste Stream Profile Description for Norfolk Naval Ship Yard	
Profile Description	Hazardous Waste Codes
Ammonium Persulfate Solid	D001
Blasting Media C/W Metals Solid	D006, D008
Blasting Media C/W Selenium Solid	D010
Bromine Liq 6.1 Poison Inhalation Hazard	D002
Calcium Hypochlorite Dry > 39% Chlorine Oxidizer Solid	D001
Cathode Ray Tube (CRTs) Solid	D008
Debris C/W Toxic Metals Solid	D004, D006, D008, D011
Debris C/W Metals pH < 2 Liq (Notify C106 Prior to Using Pin)	D002, D006, D008
EDTA Sludge Corrosivity > 6.35 mm/yr Liq	D002
Gasoline C/W Diesel, Oil, Water, Debris FP < 73 Liq (Benzene)	D001, D018
Gasoline Contained in Absorbents Solid (Benzene)	D018
Hydrazine Solution < 37% Liq (New/ Unopened)	D002
Hydrogen Peroxide 20-60% Oxidizer pH<2 Liq	D001, D002
Imaging Plates w/ Barium Solid	D005
Iridite 14-2 Oxidizer Solid	D001, D007
IWTP Debris Solid (Filter Cakes)	F006, F008, F019
IWTP Debris Solid (Filter Cakes)	D006, F006, F008, F019
IWTP Piping Lines from Building 195 and 1512 Liq	D007, D011, F007, F008, F009
Lighter Fluid FP > 73 < 140 Liq	D001
Liquids C/W Toxic Metals	D004, D005, D006, D007, D010, D011
Mercury Contaminated Debris HG > 260 PPM Solid	D009
Nitrocellulose Membrane Filters Solid	D001
Oxygen Candle Oxidizer	D001, D003, D005
Oxygen - Generating Canister Oxidizer	D001, D003, D005
Potassium Chromate Oxidizer Solid	D001, D007
Rags C/W Isopropyl Alcohol FP < 73 Liq (Inspection Process)	D001
Rags C/W Solvents FP < 73 Liq	D001, F003, F005
Selenium Powder 6.1 Poison Solid	D010
SHT Tile Scraps C/W Lead Solid	D008

Waste Stream Profile Description for Norfolk Naval Ship Yard	
Profile Description	Hazardous Waste Codes
Sodium Carbonate Peroxyhydrate Oxidizer Solid	D001
Sodium Hydrosulfide Flakes Solid	D002, D003
Sodium Nitrate Oxidizer Solid	D001, D003
Titanium Debris > 25% Liq	D001
UV-Plus Gas Purifier Solid	D001, D003

ATTACHMENT II.C - INSPECTION SCHEDULES

II.C.1. INSPECTION SCHEDULE

NNSY conducts regularly scheduled inspections of the permitted units for equipment malfunctions, structural deterioration, operational errors, spills or discharges, and security and safety issues.

II.C.2. INSPECTION SCHEDULES AND FREQUENCY

Appendices II.C-1 through II.C-4 presents a comprehensive tabulation of inspection items, the types, and frequency of the inspections. The areas/equipment scheduled for inspection include the Hazardous Waste Storage Unit Building 506 (HWSU), the Mixed Waste Storage Unit Building 280 (MWSU), Loading and Unloading Areas, Safety and Emergency Equipment, Security and Communication Devices.

II.C.3. GENERAL INSPECTION REQUIREMENTS EMERGENCY AND SAFETY EQUIPMENT

The inspection checklists for the HAZMAT Emergency Response Equipment are maintained by the Environmental Programs Division. Examples of Emergency and Safety Equipment maintained at the Facility that requires inspection are provided in Appendices II.C-3 and II.C-4, and Permit Attachment II.F, Appendix II.F-3. Permit Attachment II.F, Appendices II.F-4 and II.F-5, presents lists of Personal Protective Equipment (PPE) that is stored at the HWSU and MWSU, respectively, to prevent the undue exposure of personnel to hazardous waste. This list includes chemical resistant gloves and aprons, face shields, and other items necessary for spill response, cleanup, and repackaging.

II.C.4. TESTING OF EQUIPMENT

Required equipment testing is outlined in Appendices II.C-3 and II.C-4, and includes internal and external communications, fire suppression and water for fire control. Procedures for testing identified equipment is described in the forms provided in Appendix II.C-2.

II.C.5. SECURITY

Security measures at the Facility as described in Permit Attachment II.E, require inspection. Inspection schedules are outlined in Appendices II.C-3 and II.C-4.

II.C.6. OPERATING AND STRUCTURAL EQUIPMENT

Examples of operating equipment and structural integrity in loading and unloading areas at this Facility as stated in Permit Attachment II.E, and that requires inspections are provided in Appendices II.C-3 and II.C-4.

II.C.7. SPECIFIC PROCESS INSPECTION REQUIREMENTS

II.C.7.a. Containers Inspection

Inspections of the containers and container storage areas are conducted pursuant to the inspection schedule provided in Appendices II.C-3 and II.C-4. Results of each inspection are recorded on inspection log checklists for each storage unit (Appendices II.C-3 and II.C-4.) The inspection includes the condition of each container (acceptable or unacceptable), general observations regarding the number of containers, aisle space, compatibility placement, labeling requirements and tidiness of the area as described in Permit Module III and Permit Attachment II.E. The observations are recorded, including the date and nature of repairs and/or remedial action.

II.C.7.b. Inspection Log/Checklist

Inspection forms may differ from the forms in Appendices II.C-3 and II.C-4, but will at a minimum; include all information specified in inspection schedules and the example inspection checklist/logs. Information requested on the log sheets includes the inspector's name and title, date of inspection, problems to look for during inspection, status of the item, and the date and nature of any repairs or remedial action. Completed inspection forms are maintained in the operating record for at least three (3) years from the date of the inspection. The inspection checklists for the HWSU and HAZMAT Emergency Response Equipment are maintained by the Environmental Programs Division. The checklists for the MWSU are maintained by the Mixed Waste Management Branch.

II.C.7.c. Deficiencies

Should a deficiency be noted during the permitted unit inspections, the Permittee shall initiate immediate actions to correct any unacceptable condition related to hazardous waste storage. In the event of emergency condition is identified during an inspection of the permitted units, the inspector must immediately send notification as described in Permit Attachment II.F. Emergency maintenance or other remedial actions will be taken immediately as required to correct the situation.

II.C.7.d. Remedial Action

If an inspections reveals that non-emergency maintenance is required, such maintenance shall be completed as soon as possible to preclude further damage

and reduce the need for emergency repairs. The nature of corrective action taken and the date completed is recorded on the inspection log. If a container holding hazardous waste is not in good condition (e.g., severe rusting, apparent structural defects) or if it begins to leak, the Permittee shall transfer the hazardous waste from this container to a container that is in good condition. Remedial action is immediately taken if a hazard is imminent or has already occurred during the course of an inspection or any time between inspections. In the event of an emergency involving the release of hazardous constituents to the environment, efforts will refer to the Permit Attachment II.F, Contingency Plan.

Appendix II.C-1 – Building 506 Hazardous Waste Storage Unit Inspection Schedules

Area/Equipment	Types of Problems	Frequency of
Integrity of Container Storage Unit	Floor and wall deterioration	Daily
Condition and Integrity of Containers	Corrosion, leakage, bulging, properly closed	Daily
Compatibility of Waste Container Placement in Correct Bay	Ensure incompatible wastes are not being stored in the same bay.	Daily When In Use
Labeling Requirements	Containers missing labels, labels not readily able to be read label information incorrect.	Weekly
General Housekeeping	HWSU container storage area has debris, standing water or requires cleaning.	Weekly
Aisle Space	Ensure minimum aisle space requirements are being met between containers.	Daily When in Use
Number of Containers	Ensure the number of containers does not exceed the permitted storage capacity of the HWSU.	Daily When in Use
Safety and Emergency Equipment	Fire Extinguisher (need or recharge, component damage) Emergency Shower/Eyewash (operation, water pressure, leaking, proper drainage)	Daily
Security Devices	Fence surrounding container storage unit (properly secured and structural integrity)	Daily
Container Loading/Unloading Areas	Presence of spills	Daily When in Use

Note:

A spill kit is maintained in a sealed container at the storage unit and is used for small spills. The

spill kit will be inspected daily for accessibility and for broken seals. The contents of the spill kit will be re-inspected if the seal is broken. See Section II.F-3 (Contingency Plan) for primary responsibilities pertaining to spill response and medical emergencies.

Appendix II.C-2: Building 280 Mixed Waste Storage Unit Inspection Schedule

Area/Equipment	Type of Problems	Frequency of Inspection
Integrity of Container Storage Unit	Floor and wall deterioration	Weekly
Integrity of Container	Corrosion, leakage, bulging, properly closed	Weekly
Safety and Emergency Equipment	<ul style="list-style-type: none"> • Fire extinguisher (need to recharge or damage) • Emergency eyewash (proper operation, leakage, proper drainage) • Fire protection system (Maintenance and testing not up to date) • Emergency hazardous waste spill locker and emergency radiological spill kits (broken, missing, deterioration) 	Weekly
Security and Communication Devices	<ul style="list-style-type: none"> • Improperly secured or structural integrity affected on boundary fences, gates, and locks • Telephone (proper operation) 	Weekly
Container Loading/Unloading Areas	<ul style="list-style-type: none"> • Presence of spills 	Daily when in use
Compatibility of Waste Container Placement in Correct Bay	<ul style="list-style-type: none"> • Ensure incompatible wastes are not being stored in the same bay. 	Daily When In Use
Labeling Requirements	<ul style="list-style-type: none"> • Containers missing labels, labels not readily able to be read label information 	Weekly

	incorrect.	
General Housekeeping	<ul style="list-style-type: none">• MWSU container storage area has debris, standing water or requires cleaning.	Weekly
Aisle Space	<ul style="list-style-type: none">• Ensure minimum aisle space requirements are being met between containers.	Daily When in Use

Appendix II.C-3: BUILDING 506 – HAZARDOUS WASTE STORAGE UNIT – DAILY INSPECTION LOG ⁽¹⁾

Date and Time of Inspection: _____ Name of Inspector: _____ Title: _____

Item Inspected	Condition		Corrective Action Required	Date Action Complete ⁽²⁾
	Sat	Unsat		
Container condition - corrosion, leaking, bulging				
Storage area – check for malfunction, deterioration, and operator error				
Testing & maintenance of equipment – alarm system, fire protection equipment, spill control equipment, and decontamination equipment				
Compatibility of Waste Container Placement in Correct Area to Prevent Fires/Explosions				
Aisle Space between containers inspected to ensure minimum regulatory requirements are being met				

Notes:

- (1) Maintain copy of inspection log at unit.
- (2) Action must be initiated immediately to correct any deficiency found. The inspection log is not completed until corrective action has corrected the deficiency noted. Record the date the deficiency is corrected, not the date identified.

Supervisor review: _____ Date: _____

Virginia Department of Environmental Quality
Office of Financial Responsibility and Waste Programs
Norfolk Naval Shipyard

EPA ID No. VA1170024813
Expiration Date: XX XX, 203X

Date and Time of Inspection: _____ Name of Inspector: _____ Title: _____

Item Inspected	Condition		Corrective Action Required	Date Action Complete ⁽²⁾
	Sat	Unsat		
Number of Containers compared to permitted limit				
Container Loading/Unloading Areas and containment areas are inspected for presence of liquids or evidence of spills.				

Notes:

- (1) Maintain copy of inspection log at unit.
- (2) Action must be initiated immediately to correct any deficiency found. The inspection log is not completed until corrective action has corrected the deficiency noted. Record the date the deficiency is corrected, not the date identified.

Supervisor review: _____ Date: _____

Appendix II.C-4 : Building 280 Mixed Waste Storage Unit Daily/Weekly Inspection Logs

MIXED WASTE STORAGE UNIT - DAILY INSPECTION
(Container loading/unloading areas when in use)

Date of
Inspection: _____

Time of
Inspection: _____

ITEM INSPECTED	CONDITION		DEFICIENCY NOTED (Include DR/RDR Number) <input type="checkbox"/> N/A	DATE DEFICIENCY CORRECTED
	SAT	UNSAT		
Loading/unloading areas and containment areas are inspected for presence of liquids or evidence of spills.				
Compatibility of Waste Container Placement in Correct Area to Prevent Fires/Explosions				
Aisle Space between containers inspected to ensure minimum regulatory requirements are being met				

Notes:

- (1) If a deficiency is noted, action must be initiated immediately to correct any deficiency. This inspection is not complete until deficiency has been corrected.
- (2) Maintain original inspection in Mixed Waste Management Branch office area.

**INSPECTOR
INFORMATION:**

Print Name: _____

Badge No.: _____

CERTIFICATION: I certify that this inspection is completed and any deficiency identified has been corrected.

Supervisor Signature: _____

Badge No.: _____

Date: _____

BUILDING 280 MIXED WASTE STORAGE UNIT - WEEKLY INSPECTION

Date of Inspection: _____ Time of Inspection: _____

ITEM INSPECTED	CONDITION		DEFICIENCY NOTED (Include DR/RDR Number) □ N/A	DATE DEFICIENCY CORRECTED
	SAT	UNSAT		
A. Integrity of Container Storage Unit				
Floor, wall, dikes, berms and ramps inspected for general condition including presence of cracks, deterioration, settlement and erosion.				
B. Integrity of Container				
Container condition – corrosion, leakage, bulging, properly closed.				
C. Container Labeling				
Containers missing labels, labels not readily able to be read label information				
D. General House Keeping				
MWSU container storage area has debris, standing water or requires cleaning.				
E. Safety and Emergency Equipment				
Ensure testing and maintenance of equipment such as alarm system and fire protection equipment are up to date.				
Emergency eyewash station filled with water, has been flushed and cleaned quarterly with notation on the inspection tag/log, and has been currently maintained IAW manufacturer's requirements.				
Emergency hazardous waste locker and emergency radiological spill kits are available and properly sealed.				
F. Security and Communication Devices				
Boundary fences, gates, and locks are properly secured and undamaged.				
Telephone operating properly.				

Notes:

- (1) If a deficiency is noted, action must be initiated immediately to correct any deficiency. This inspection is not complete until deficiency has been corrected.
- (2) Maintain original inspection in Mixed Waste Management Branch office area.

INSPECTOR

INFORMATION: Print Name: _____ Badge No.: _____

CERTIFICATION: I certify that this inspection is completed and any deficiency identified has been corrected.

Supervisor Signature: _____ Badge No.: _____ Date: _____

ATTACHMENT II.D - PERSONNEL TRAINING

II.D.1. TRAINING REQUIREMENTS

The personnel training program is in compliance with the Virginia Hazardous Waste Management Regulations (VHWMR) 9 Virginia Administrative Code (VAC) 20-60-264 and Title 40 Code of Federal Regulations 40 CFR § 264.16, and 40 CFR § 270.14(b)(12) and Occupational Safety and Health Administration (OSHA) requirements specified in 29 CFR § 1910.1200.

II.D.1.a. Training Program

The training program provides specific training to personnel at levels relevant to their positions at the permitted storage units in the safe management and handling of a wide range of hazardous waste and mixed waste. The training program is continuous and teaches permitted unit personnel hazardous waste and mixed waste management procedures, including contingency plan implementation, and utilizes classroom, electronic and on-the-job training.

II.D.1.b. Training for New Employees

Employees receive training on the permitted unit hazardous waste and/or hazardous materials and mixed waste management responsibilities prior to working with the materials and not able to work in unsupervised positions until they have completed the training program requirements. All new employees assigned to the permitted units will receive required training within six (6) months of beginning such work.

II.D.1.c. Training Documentation

Records documenting the job title for each position, job descriptions, names of employees, written description of the type and amount of introductory and continuing training that will be given to each employee and records documenting training of facility personnel are maintained as part of the facility's operating record as required by 40 CFR § 264.16(d)(1), (d)(2) and (d)(4). The training records for the Hazardous Waste Storage Unit (HWSU) are maintained by NNSY, located at Building M-22, Occupational Safety, Health and Environment Office, Environmental Division. The training records for the Mixed Waste Storage Unit (MWSU) are maintained as part of the operating record by NNSY, located at Building M-32, Mixed Waste Management Branch Office, Nuclear Support Facilities and Waste Management Division. Training records on current personnel are kept until closure of the permitted units and the training records for former employees are kept for at least three (3) years from the date the employee last worked at the permitted unit (effective termination date.)

II.D.1.d. Training Frequency

The training program is designed to ensure that personnel can respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems. This includes procedures for using, inspecting, and repairing emergency and monitoring equipment, communications or alarm systems, responses to fires or explosions, response to groundwater contamination incidents, and shutdown of operations.

II.D.2. **ANNUAL REFRESHER TRAINING**

All personnel assigned to handle and manage hazardous waste and mixed waste for the permitted units receive an annual refresher of their initial hazardous waste and mixed waste training.

The annual refresher training, as applicable, includes but is not limited to:

- a. All hazardous wastes or mixed wastes currently being handled at the permitted unit and any changes that have occurred during the past year;
- b. Status of hazardous waste or mixed waste storage and operating conditions and procedures, noting any problem or potential problem areas;
- c. Changes to this Permit;
- d. Review of emergency procedures and inspection requirements, as described in the Contingency Plan, Permit Attachment II.F;
- e. Any incidents that have occurred during the past year that warranted implementation of the Contingency Plan and/or emergency actions; and
- f. The following are training time requirements mandated by regulation:
 - i. OSHA 29 CFR § 1910.1200 – Adequate amount of time to establish competency for hazard communications;
 - ii. OSHA 29 CFR § 1910.120 – (Initial training of 24 to 40 hours) Refresher training of eight (8) hours annually, for employees involved in hazardous waste operations at the permitted units;
 - iii. OSHA 29 CFR § 1910.1450 – Adequate amount of time to establish competency for Safety Data Sheets;
 - iv. DOT 49 CFR § 172.704– Adequate amount of time to establish

competency for DOT requirements; and

- v. EPA 40 CFR § 264 – Adequate time to ensure that permitted unit personnel are able to respond effectively to emergencies.

II.D.2.a. Training for Assigned Duties

The training program focuses on all types of hazardous and mixed wastes managed at the permitted units. Employees assigned to work at the permitted units are specifically trained to follow proper and safe operating procedures; respond effectively in the event of a spill or other emergency; and follow procedures for maintaining compliance with VHWMR (e.g., waste characterization, record keeping, inspections, security, etc.)

II.D.2.b. Instruction

The program is directed by someone trained in hazardous waste management procedures and includes instruction relevant to each person's position. Supplemental training may be offered with additional off-site training through attendance at seminars and workshops on hazardous waste management and other applicable topics to ensure compliance with VHWMR. A copy of the classroom instruction and an outline of the employee training program are kept on file at the facility and is included in Appendix II.D-1 (HWSU) and Appendix II.D-2 (MWSU). The initial hazardous waste or mixed waste training and annual refresher training material receive updates and revisions, as necessary, to ensure compliance.

II.D.3. **ROLE OF SUPERVISORY PERSONNEL AND TRAINING**

Management responsibilities involving compliance with the VHWMR reside with the Director, Occupational Safety, Health and Environment Office and the Environmental Division Head for the HWSU and the head of the Nuclear Support Facilities and Waste Management Division and the Mixed Waste Management Branch for the MWSU. The hazardous waste and mixed waste training programs are directed by senior managers; the Environmental Engineering Support Branch Head, Occupational Safety, Health, and Environment Office, designated as training director for hazardous waste management; and the Mixed Waste Management Branch Head, designated as training director for mixed waste management.

II.D.4. **RESPONSIBILITY FOR TRAINING**

The on-site management and supervisors directly responsible for or who supervise employees engaged in hazardous waste operations will receive additional training on managing operations at the time of job assignment. If changes to the course

content are of a magnitude that requires revision to this training outline, the Permit will be modified pursuant to procedures specified in 40 CFR § 270.42.

II.D.5. REQUIRED TRAINING FOR ALL PERSONNEL

Employees assigned to the permitted units involved in hazardous waste management and mixed waste receive training that introduce the general classes and characteristic of chemicals and chemical wastes that can be hazardous to human health and the environment. The general content includes the terms toxicity, reactivity, corrosivity, ignitability, hazardous waste and hazardous materials as defined. Employees receive training on the facility's hazardous waste and hazardous materials management responsibilities and the implementation of the Contingency Plan (Permit Attachment II.F).

II.D.6. TRAINING FOR PERSONNEL INVOLVED WITH THE MIXED WASTE STORAGE UNIT PERSONNEL

Employees assigned to the MWSU receive additional training on the facility's mixed waste management responsibilities prior to working with the materials. Job Descriptions may be consistent in their degree of specificity with descriptions for other similar positions at the permitted units, but must include requisite skill, education, or other qualifications and duties of employees assigned to each position in accordance with the VHWMR.

II.D.7. REQUIRED TRAINING FOR EMERGENCY RESPONSE PERSONNEL

Specific topics are addressed to train personnel for emergency responses include but are not limited to emergency procedures including fires, emergency equipment including the procedures for using, inspecting, repairing, and replacing emergency and monitoring equipment, fire extinguisher, personal protective equipment (PPE), and spill control and response. Personnel assigned to the permitted units are trained in the communication response in the event of an emergency by voice through telephone or cellular phone or radio system and fire alarm system. Physical response to fires is under the jurisdiction of the NNSY Fire Department with guidance from the Emergency Coordinator, identified in the Contingency Plan, Permit Attachment II.F. Personnel operating in hazardous waste and mixed waste areas are trained to identify and react to emergency situations that includes shutdown and evacuation procedures.

APPENDIX II.D-1: Outline of HWSU Employee Training Program

OUTLINE OF RCRA TRAINING FOR ENVIRONMENTAL PROTECTION ASSISTANT

I. Explain RCRA & VHWMR

II. Define Hazardous Waste

- | | |
|------------------|------------------------|
| a) Ignitability | f) Hazardous Waste |
| b) Corrosivity | g) Hazardous Materials |
| c) Reactivity | h) Generation |
| d) Toxicity | i) Disposal |
| e) Listed Wastes | j) Spill |

III. Review of Norfolk Naval Shipyard's Hazardous Wastes

- a) Waste Dictionary

IV. Review of Operating Requirements

- a) Inspections
- b) Manifest System
- c) Handling Precautions
- d) Packaging
- e) Labeling

V. Review of Emergency Procedures

- a) Alarm System
- b) Location of Emergency Equipment
- c) Emergency Shutdowns
- d) Evacuation Plans
- e) Reporting a Spill

OUTLINE OF RCRA TRAINING FOR ENVIRONMENTAL PROTECTION SPECIALIST

In addition to those items included in the environmental protection assistant training, the environmental protection specialist training includes:

I. Review of Applicable Regulations

- a) Alarm System
- b) Evacuation Plan
- c) Reporting a Spill

II. Contingency Plan

- a) Disaster Control
- b) Fire
- c) Release to the Environment
- d) Communication System

III. Permit Conditions

OUTLINE OF RCRA TRAINING FOR SUPERVISORS

In addition to those items included in the environmental protection specialist training, supervisor training includes:

I. Policies and Procedures

- a) Inspections
- b) Record Keeping
- c) Labeling
- d) Hazardous Work Permits
- e) Process Safety
- f) RCRA Overview

II. Contingency Plans

- a) Disaster Control
- b) Fire
- c) Releases to the Environment
- d) Communication Systems

III. Permit Conditions

**OUTLINE OF RCRA TRAINING FOR MANAGERS
(DIVISION, OPERATION AND ENGINEERING MANAGERS)**

The training for managers includes:

I. Contingency Plans

- a) Disaster Control
- b) Fire
- c) Releases to the Environment
- d) Communication System

II. Permit Conditions

APPENDIX II.D-2: Outline of MWSU Employee Training Program

OUTLINE OF MIXED WASTE TRAINING FOR MIXED WASTE HANDLER

I. Explain Mixed Waste Policy

II. Explain RCRA and VHWMR

III. Definitions

- a) Hazardous Waste
- b) Hazardous Material
- c) Mixed Waste
- d) Accumulation Areas
- e) Accumulation Times
- f) Waste Characteristics

IV. Review of Norfolk Naval Shipyard's Mixed Wastes

- a) Waste Profile Sheets

V. Review of Operating Requirements

- a) Inspections
- b) Handling Precautions
- c) Packaging
- d) Labeling
- e) Record Keeping

VI. Review of Emergency Procedures

- a) Alarm System
- b) Location of Emergency Equipment
- c) Emergency Shutdowns
- d) Evacuation Plans
- e) Reporting a Spill

OUTLINE OF MIXED WASTE TRAINING FOR SUPERVISOR

I. Mixed Waste Policies and Procedures

- a) Inspections
- b) Record Keeping
- c) Labeling
- d) RCRA and VHWMR Overview

II. Contingency Plans

- a) Disaster Control
- b) Fire
- c) Releases to the Environment
- d) Communication Systems

III. Permit Conditions

OUTLINE OF MIXED WASTE TRAINING FOR MANAGERS

The training for managers includes:

I. Contingency Plans

- a) Disaster Control
- b) Fire
- c) Releases to the Environment
- d) Communication System

II. Permit Conditions

ATTACHMENT II.E - PROCEDURES FOR HANDLING AND MANAGEMENT OF HAZARDOUS AND MIXED WASTE INCLUDING SECURITY MEASURES, STORAGE OPERATIONS AND CONTAINER MANAGEMENT

II.E.1. INTRODUCTION

Pursuant to 40 CFR § 264.14, § 264.17, and 264 Subpart I, Norfolk Naval Shipyard (NNSY) outlines the procedures for handling and management of hazardous waste and mixed waste including the security measures and ignitable, reactive, or incompatible waste in containers for the permitted units.

II.E.2. SECURITY

NNSY implements the outlined security measures at the facility for compliance with the 40 CFR § 264.14 for the permitted units, Hazardous Waste Storage Unit (HWSU, Building 506) and the Mixed Waste Storage Unit (MWSU, Building 280.)

II.E.2.a. Access Control

The NNSY is a restricted-entry military facility served by a system of gates that are staffed by security or closed at access. Guarded gates restrict access and require validated vehicle passes and identification for authorized personnel. Vehicles requiring access to NNSY must go through the commercial vehicle access station for inspection and clearance and pedestrian traffic must show required identification for access. Visitors must obtain a pass in the Pass and Identification Office, Building 1502. Security badges are required for all personnel entering NNSY and visibly worn at all times while in NNSY. Security personnel are in communication with the central dispatch office and the Captain of the Watch at all times.

II.E.2.b. Barrier and Means to Control Entry

Commercial transporters of hazardous and mixed waste access NNSY's permitted units through Gate 15. The permitted units, HWSU and MWSU, rely upon the fencing and guarded gates to control access. The HWSU is enclosed by an eight (8) foot chain-link fence with three strands of barbed wire at the top. The MWSU is located within an enclosed building with an internal fencing that provides additional security. Both permitted units' entrances and gates remain locked, except when performing hazardous waste and mixed waste management activities.

II.E.2.c. 24 Hour Surveillance System

NNSY is controlled 24 hours by security personnel, consisting of armed contract guards and/or Department of Defense officers who maintain shipyard security, and routine patrols of NNSY, including patrol boats operated by the security department to control access to the portions of the NNSY complex that border the waterfront areas. NNSY conducts periodic external inspections at the permitted units, HWSU and MWSU, to ensure against entry by unauthorized personnel and to provide advance warning of any unusual occurrences (Permit Attachment II.C, Inspection Schedule.)

II.E.2.d. Warning Signs

Signs reading “Danger-Unauthorized Personnel Keep Out” are posted on the gates and on the fence at all approaches to the permitted units and legible from a distance of 50 feet. The signs are in English only, because there is no other language predominant in the area. Signs reading “Danger -Flammable Material – No Smoking,” legible from 25 feet, are posted on the doors, gates, buildings, and fences of the permitted units in accordance to 40 CFR § 264.17(a).

II.E.3. **PREPAREDNESS AND PREVENTATION**

The facility has adequate equipment for internal and external communications, emergencies, and fire control. Safety and fire protection programs are implemented to ensure all activities are performed in a manner that prevents personal injury and unintended discharges of hazardous waste to the environment.

II.E.3.a. Emergency and Monitoring Equipment

Procedures for using, inspecting, repairing, and replacing emergency and monitoring equipment identified in Permit Attachment(s) II.C and II.F and in-house training programs include these procedures, as described in Permit Attachment II.E.

II.E.3.b. Communications or Alarm Systems

- a. Internal Communications: Each permitted unit provide methods for facility personnel to communicate by voice, telephones, cellular phones, and radio systems to alert others of an emergency or for routine communications.
- b. External Communications: In areas outside of the permitted units, facility personnel are provided with a facility wide telephone system.
- c. Emergency telephone numbers are posted in the vicinity of each telephone. Evacuation maps are placed in strategic locations throughout the permitted units to aid personnel in emergency response procedures. Emergency procedures, instructions, and telephone numbers are posted with evacuation

maps for quick reference.

- d. Audible fire alarm systems installed in both permitted units automatically notifies the NNSY Fire Department, as detailed in Permit Attachment II.F.
- e. Procedures for initiating a fire alarm, shutdown operations procedures and evacuating areas are maintained for continual review and use by permitted unit personnel as described in Permit Attachment II.F.

II.E.3.c. Shutdown of Operations

When a temporary cease of operations is invoked, no material is moved into or out of the permitted units with the exception of emergency circumstances. Should the situation require shutdown of operations, personnel are trained to shut down in an orderly manner and evacuate to a safe area. Due to varying dates, the curtailment period will be in accordance with the NNSY curtailment schedule, which is an internal published document. During curtailment security will be maintained in accordance with Condition II.E.2.

II.E.4. **STORAGE OPERATIONS**

The descriptions for the specific process and operations of the management and storage of the hazardous and mixed waste for the permitted units are described in the following sections and Figures II.E-1 through II.E-4.

II.E.4.a. Container Management

NNSY implements the outlined container management for the storage of hazardous waste for compliance with 40 CFR Subpart I for the permitted units, HWSU and MWSU, and as described in Permit Module III.

II.E.4.b. Description of Containers

The containers used for storage meet the specifications in 49 CFR § 178 for performance-oriented-packaging for hazardous materials. Containers are constructed of materials compatible with the contained wastes. Hazardous waste stored in bulk (container capacity not to exceed 1,000 gallons) in the permitted unit is not to exceed the maximum storage capacity of the unit, specified in Permit Condition II.E.3., or the secondary containment capacity of the bay. Bulk packaging used will be in conformance with the general regulations for packaging and packages in accordance with 49 CFR 173. The original product container may be used for disposal purposes after it has been inspected and determined to be in good condition (Permit Attachment II.C, Inspection Schedule.)

- a. Condition of Containers: Prior to transfer to a permitted unit, containers are

inspected for proper labeling, as described in Condition III.E.1., and integrity. If a container is visually inspected to be in poor condition, the waste is transferred into a DOT approved container in good condition or the container may be over-packed into a 110 gallon (or less) DOT approved container.

- b. Compatibility of Containers: Hazardous waste is not be placed in an unwashed container that previously held an incompatible waste or material.
- c. Compatibility of Waste in Containers: Under no circumstances shall incompatible types of waste be mixed in the same container. Each generator of a waste is required to use containers that are compatible with the types of waste generated at that shop.
- d. Compatibility Determination: Analytical data and generator knowledge, as described in Permit Attachment II.B, ensure that the waste is compatible with its container and/or the other types of waste.

II.E.4.c. Loading/Unloading Procedures for Transport of Waste

Containers are checked to verify proper packaging and labeling upon arrival at the permitted units. Should a spill occur on the transport vehicle or on the access area, all loading/unloading operations will cease and immediate cleanup procedures will be initiated. These procedures include stopping the leak and cleaning up any spilled liquid with absorbent. All contaminated materials are placed in an approved container, appropriately labeled, and stored as a hazardous waste, as described in Permit Attachment II.F.

- a. Hazardous Waste Storage Unit: All loading and unloading operations that take place at the Hazardous Waste Storage Unit will be supervised by trained personnel. Hazardous wastes generated at the facility are containerized and transported to the Hazardous Waste Storage Unit.
 - i. Loading of containers is accomplished using a forklift and plastic or wooden pallets. In transit, the containers are bundled together on the pallet to ensure against toppling and accidental spillage of hazardous waste.
 - ii. Unloading of containers from the truck to the storage unit is performed with a forklift or a drum dolly. Containers are then placed in the appropriate bay of the storage unit.
- b. Mixed Waste Storage Unit: Mixed wastes generated at NNSY are transported using approved radiological transport vehicles.
 - i. Loading of containers is accomplished using a forklift and pallets or by personnel for smaller quantities. In transit, the containers are secured to

ensure against toppling and accidental spillage of mixed waste.

- ii. Unloading of containers from the truck to the permitted unit is performed with a forklift, a drum dolly or by personnel for smaller quantities. Containers are then placed in the appropriate location of the unit.

II.E.4.d. Container Labeling Requirements

Sealing and labeling of containers for the permitted units are performed at the point of generation. Labels are placed on hazardous waste containers and verified during inspections and upon arrival at a permitted unit.

II.E.4.e. Subpart CC Air Emission Standards for Containerized Waste

Air emission standards apply to owners and operators of facilities that treat, store, or dispose of hazardous waste in tanks, surface impoundments, or containers subject to either 40 CFR § 264 subpart I, J, or K; except as 40 CFR § 264.1 and 40 CFR § 264.1080(b) (as outlined in Condition II.E.4.f.). Generally, if a hazardous waste has an average volatile organic compound concentration less than 500 parts per million by weight at the point of generation, the unit is exempt from these air emission standards.

II.E.4.f. Standards Applicable to Containers

Standards applicable to containers of hazardous wastes as specified in 40 CFR § 264.1086, are divided into three levels of air emission controls for containers based on container size, organic contents, and whether the container is used in a waste stabilization process. Containers with a capacity less than 0.1 m³ (26 gallons) are exempted from the rule, as are containers in satellite accumulation areas.

- a. Container Level 1 Standards (<119 gallons or ≥119 gallons and not “in light material service”) controls require that the hazardous waste be stored in an approved Department of Transportation (DOT) container, a container equipped with a cover and closure devices for each opening, or an open-top container with an organic- vapor-suppressing barrier. A container “in light material service” is used to manage a material for which both of the following conditions apply:
 - i. The vapor pressure of one or more of the organic constituents in the material is greater than 0.3 kilopascals at 20 °C; and
 - ii. The total concentration of the pure organic constituents having a vapor pressure greater than 0.3 kilopascals at 20 °C is equal to or greater than 20% by weight.

- b. Container Level 2 Standards (≥ 119 gallons and “in light material service”) controls require that the hazardous waste be stored in an approved DOT container, a container that operates with no detectable organic emissions or a demonstrated vapor-tight container.
- c. Container Level 3 Standards (waste stabilization occurs in the container) controls require that the hazardous waste be stored in a container that is either vented directly to a control device or is located inside an enclosure that is vented through a closed-vent system to a control device. Design and operating criteria are specified in the rule for the enclosure, closed-vent system, and control device.

II.E.5. CONTAINER STORAGE, STRUCTURES AND PROCEDURES

For the HWSU, incoming waste containers are placed in waste storage bays that are isolated from each other by means of walls and curbs to reduce or eliminate the potential for incompatible reactions to occur. Wastes stored in the MWSU are packaged in separate mixed waste compatible bags/internal containers prior to loading in the storage container.

II.E.5.a. Hazardous Waste Storage Unit Structure

This permitted unit is separated into eight (8) bays – seven (7) bays for storage and one bay for staging of waste coming into or being prepared for shipment out of the permitted unit. The maximum quantity of waste in this permitted unit at any given time may not exceed 86,240 gallons, based on storage in seven (7) bays and the aisle spacing limitations and stacking requirements for each bay. Due to limitation of containment capacity in the permitted unit, no waste container with a volume greater than 1,000 gallons is permitted for storage.

II.E.5.b. Waste Segregation - HWSU

The plan is designed to safely maximize the use of the storage space. The storage bays are identified as Bay A-G for hazardous waste storage. The processing and storage bay is identified as Bay H. Generally, storage of waste will be as designated in the Waste Dictionary. The primary waste segregation is by Department of Transportation (DOT) Hazard Class in accordance with 49 CFR 177 (Permit Attachment II.B, Appendix II.B-1). The DOT Hazard Class 8 (Corrosives) waste, is further segregated into acids and caustics (alkalines) and placed into separate bays. The seven (7) waste storage bays labeled A through G are not permanently designated for wastes of a single DOT Hazard Class and allow for storage of a group of compatible wastes. The bays A-G may be designated to contain the same compatible waste group.

- a. DOT Hazard Classes stored in the bays A through G include:
 - i. DOT Class 2 (Gases)
 - ii. DOT Class 3 (Flammable Liquids)
 - iii. DOT Class 4 (Flammable Solids, Spontaneously Combustible Materials and Dangerous- When-Wet Materials)
 - iv. DOT Class 5 (Oxidizers and Organic Peroxides)
 - v. DOT Class 6 (Poisonous Liquids)
 - vi. DOT Class 8 (Corrosive Liquids)
 - vii. DOT Class 9 (Miscellaneous Hazardous Materials)

II.E.5.c. Bay At Capacity - HWSU

Under unusual circumstances, when one bay is at capacity, new shipments of waste within that same compatibility grouping may be stored in another bay with compatible wastes, so long as all wastes in the overflow bay are stored on containment pallets, which constitute secondary containment for containers on that pallet.

II.E.5.d. Aisle Space Requirements

The minimum distance of two (2) feet between the outer rows of stored waste in any bay and the nearest interior bay separation wall will be maintained to permit easy access to all containers for inspection and emergency response purposes, except for bays used to store flammable liquids. A minimum distance of two (2) feet will be maintained between all storage rows.

An aisle used to store flammable liquids shall be at least three (3) feet wide, where necessary, for reasons of access to doors, windows or standpipe connections in accordance with 29 CFR 1910.106 (d)(5)(vi)(f). All containers less than 119 gallons may be stacked according to 49 CFR 178.606 not to exceed two (2) containers high.

II.E.5.e. Mixed Waste Storage Unit Structure

The maximum quantity of waste in this permitted unit at any given time may not exceed 29,480 gallons. All waste containers are kept closed during storage.

Each container of mixed waste is packaged in a primary container (bags/internal

container), then placed inside the storage container as secondary containment during storage operations. The secondary containment will be capable of containing the entire capacity of mixed waste stored in the primary container. The secondary containment is the physical separation of incompatible wastes stored within the permitted unit. All wastes, are individually containerized to prevent comingling of wastes. No potentially incompatible wastes may be placed in the same container at the same time.

II.E.5.f. Aisle Space Requirements

The minimum distance of two (2) feet between the containers will be maintained to permit easy access to all containers for inspection and emergency response purposes, except for containers of flammable liquids. The distance between containers of flammable liquids will be at least three feet in accordance with 29 CFR 1910.106 (d)(5)(vi)(f). All non-bulk containers may be stacked according to 49 CFR 178.606 not to exceed two (2) containers high.

II.E.5.g. Storage of Restricted Waste

NNSY management of waste subject to Land Disposal Restrictions (LDRs) will demonstrate that the waste is stored in containers on-site, and such storage is solely for the purpose of accumulating sufficient quantities of waste to facilitate proper treatment, recovery, or disposal.

- a. If restricted wastes are stored beyond one year, NNSY will provide proof, in the event of an enforcement action, that such storage is for allowable reasons.
- b. Prior to one year, DEQ bears the burden of proof required to show the prohibited wastes are being stored in error.
- c. Storage requirements do not apply to restricted wastes that:
 - i. Meet applicable treatment standards;
 - ii. Have received a nationwide variance;
 - iii. Have received an exemption under 40 CFR §268.6; or
 - iv. Have received a case-by-case extension under 40 CFR §268.5.

II.E.6. **PROCEDURES FOR HANDLING IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE IN CONTAINERS**

Wastes are placed in their appropriate container at each point of generation. NNSY is responsible for ensuring inbound mixed waste from the offsite locations

is stored in such a way as to prevent incompatible wastes from coming into contact with each other.

Incompatible wastes are defined as those wastes that, if combined or mixed, will produce undesirable or uncontrolled reactions resulting in adverse consequences. Reactive and ignitable wastes are placed in containers compatible with their contents and therefore only external ignition sources may ignite the wastes.

II.E.6.a. Precautions to Prevent Ignition or Reaction of Ignitable or Reactive Waste

To prevent external ignition, no smoking is allowed within the permitted units and no open flames or welding is allowed when ignitable wastes are present, unless a hot work permit is issued. "No Smoking" and flammable warning signs are posted in these areas as stated in Condition II.E.2.d. In addition, spark proof tools are used to open and reseal containers and all electrical equipment is grounded.

II.E.6.b. General Precautions for Handling Ignitable, Reactive, or Incompatible Waste

Personnel handling wastes at NNSY are trained according to the specifications found in Permit Attachment II.D. Before storing any waste in the same bay/area or mixing wastes, personnel will be instructed to refer to Condition II.B.6.d or Attachment II.B of this permit.

II.E.6.c. Procedures to Prevent Accidentally Mixing of Incompatible Wastes

Incompatible wastes must not be placed in the same container as other incompatible waste. Each incompatible waste should be placed in a clean container. Hazardous wastes must not be placed in an unwashed container that previously held an incompatible waste or material. Storage containers holding hazardous wastes that are incompatible with any waste or material stored nearby in other containers must be separated from them.

Any waste which is reactive with water must not be placed in the same bay with non-regulated waste, or hazardous waste which contains water unless the reactive waste is over-packed. Water must not be used to extinguish fires or remediate spillage.

Personnel handling wastes at NNSY will be trained according to the specifications found in Attachment II.D of this permit. Before storing any wastes in the same bay or blending like wastes, personnel will be instructed to refer to the Segregation Table for Hazardous Materials found in Condition II.B.3. General precautions for handling these wastes are discussed below. The compatibility of all waste managed at the facility will be determined pursuant to procedures specified in the Waste Analysis Plan and stored within the same secondary containment. Additionally, containers are stored on pallets to minimize contact

with precipitation, leaks, or spills. Wastes are not mixed and some wastes may be over-packed during storage to provide additional secondary containment when container integrity is in question.

Figure II.E-1: HWSU Layout

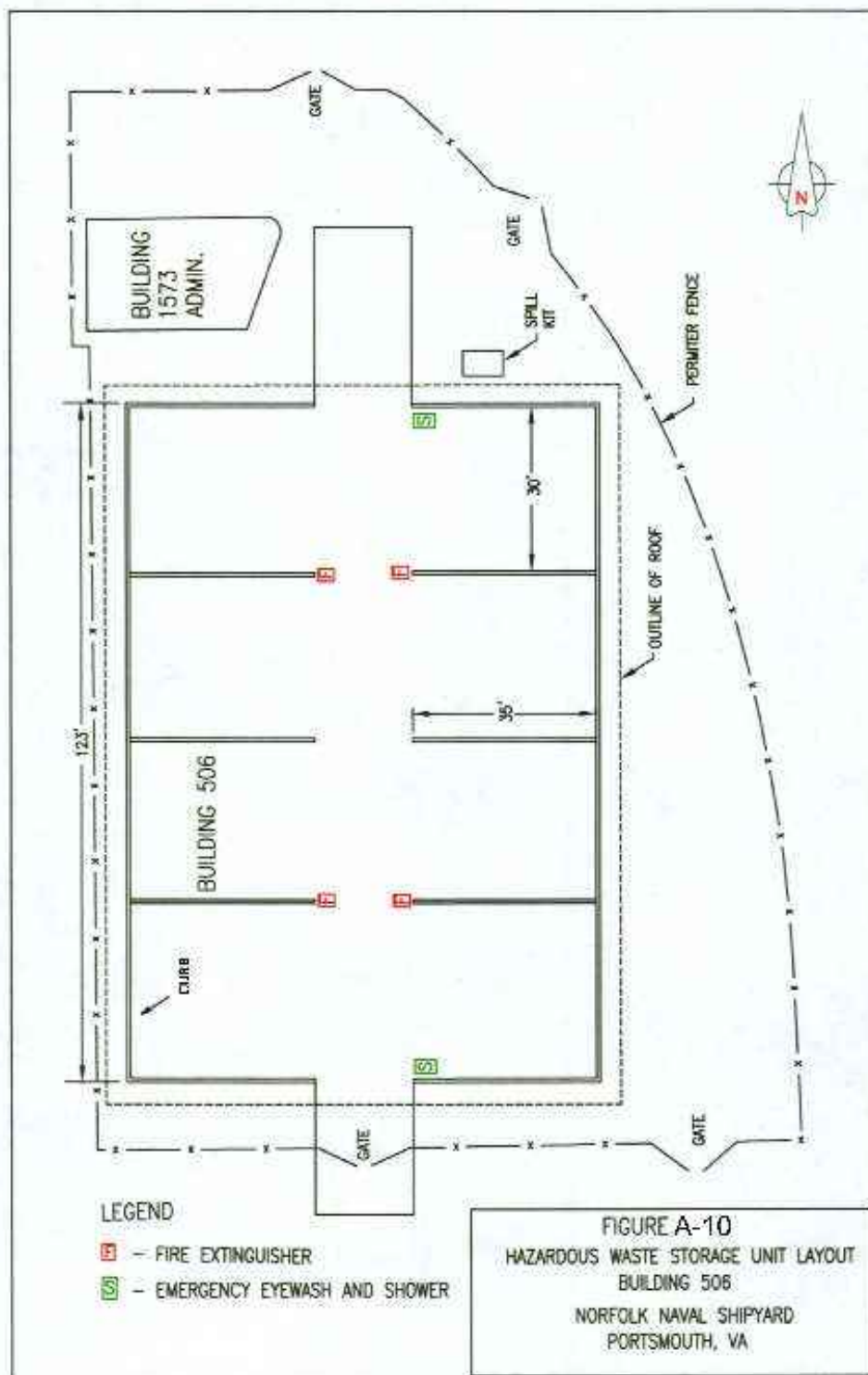


Figure II.E-2: HWSU Typical Pallet Arrangement

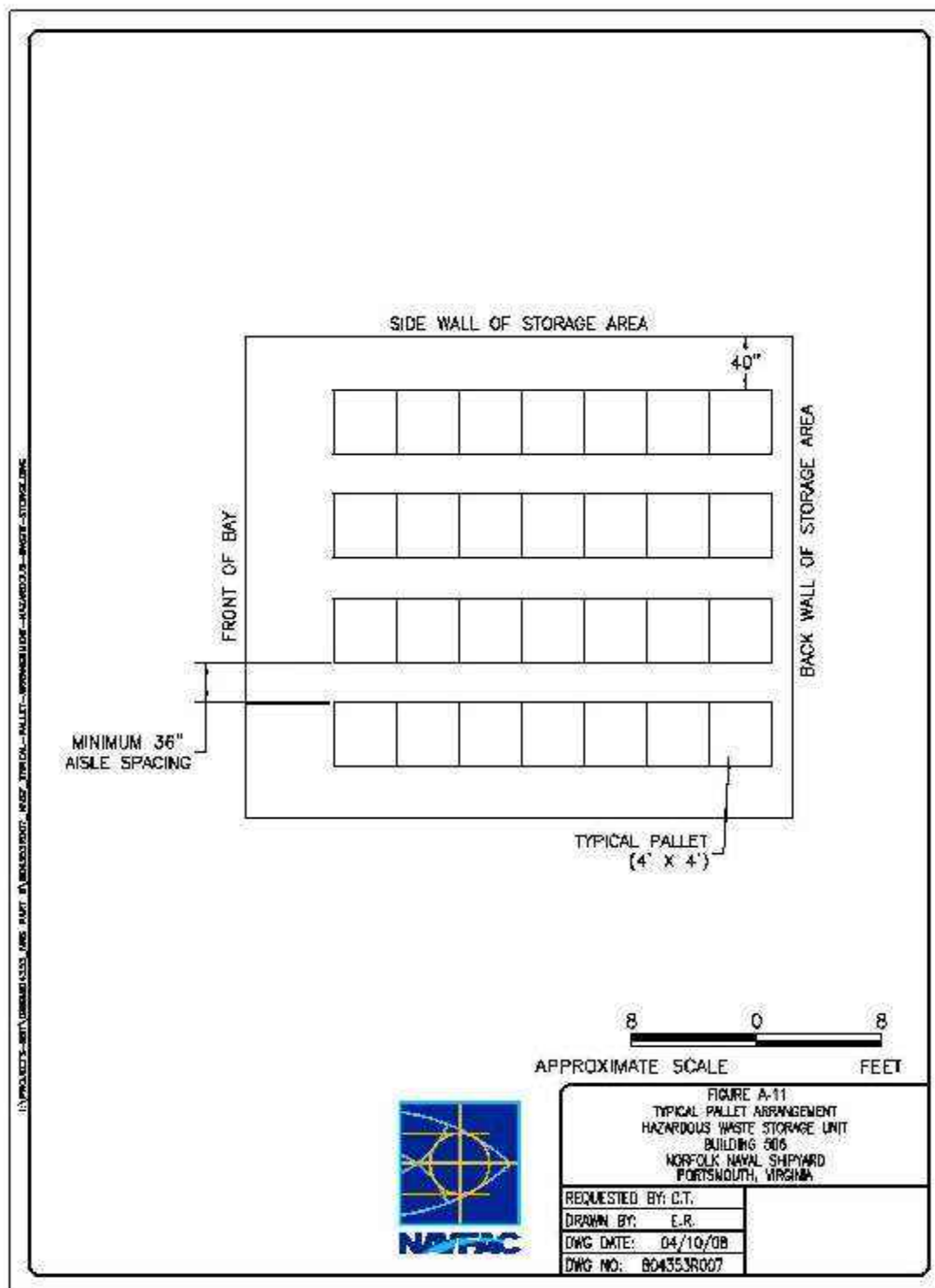


Figure II.E-3: MWSU Layout

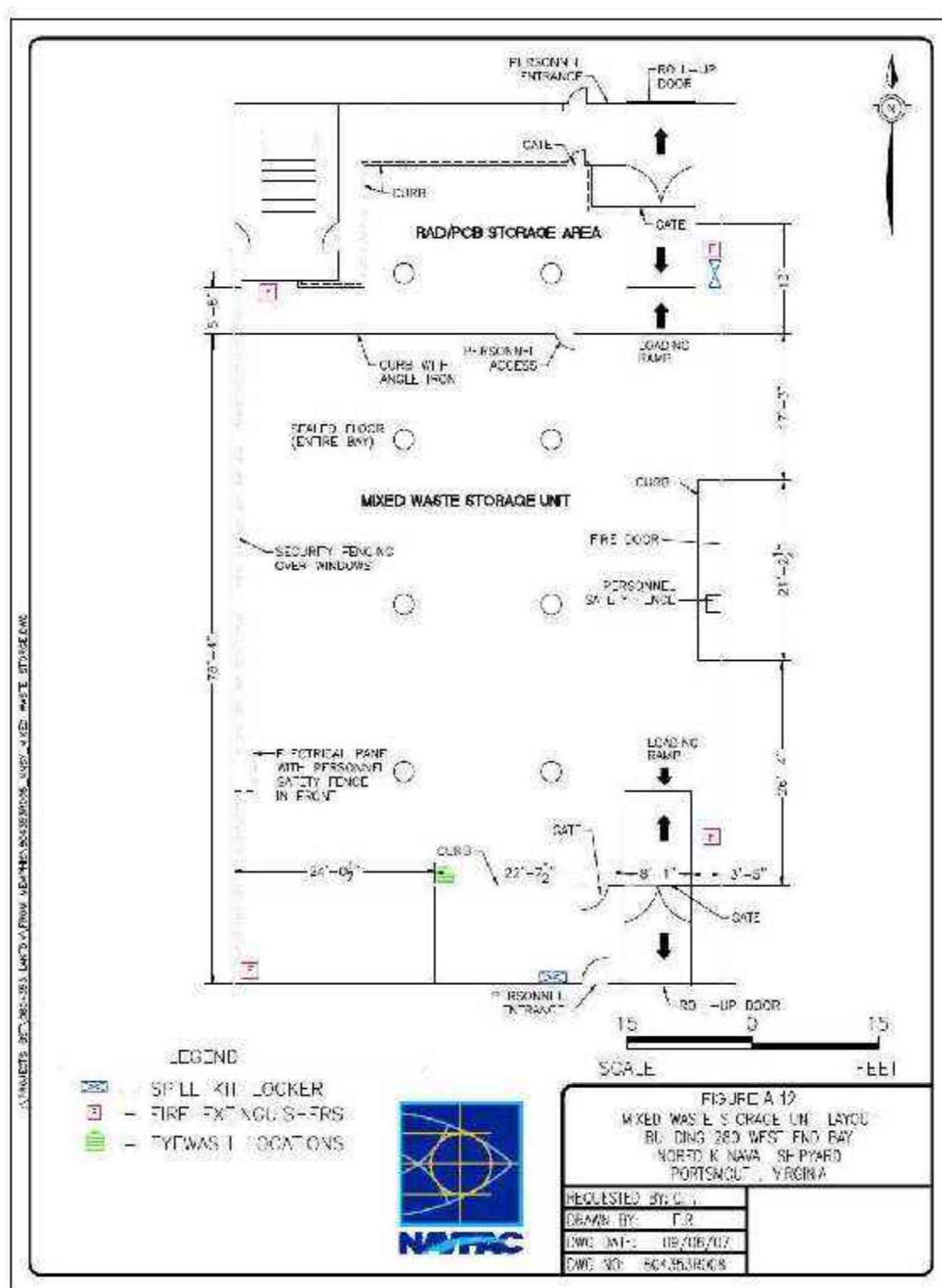
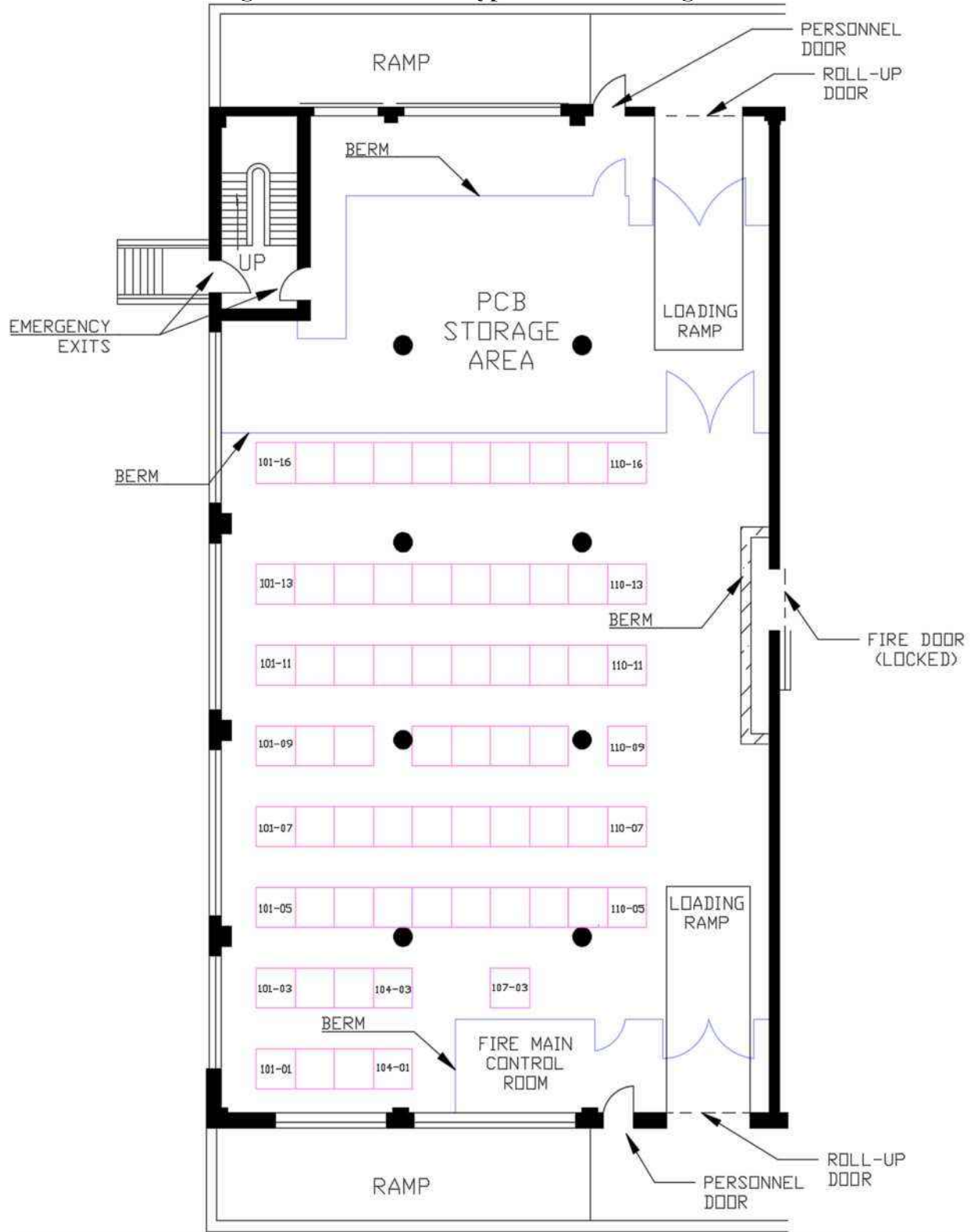


Figure II.E-4: MWSU Typical Pallet Arrangement



**Table II.E-2: Waste Codes Accepted for DOT Class Bay Designation -
HWSU**

DOT Classifications	Waste Codes	Compatible Waste Codes or Dot Class
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DOT Class 2 (Gases)		
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DOT Class 3 (Flammable Liquids)		
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DOT Class 4 (Flammable Solids, Spontaneously Combustible Materials and Dangerous- When-Wet Materials)		
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DOT Class 5 (Oxidizers and Organic Peroxides)		
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DOT Class 6 (Poisonous Liquids)		
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DOT Class 8 (Corrosive Liquids)		
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DOT Class 9 (Miscellaneous Hazardous Materials)		
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ATTACHMENT II.F - CONTINGENCY PLAN

II.F.1. CONTINGENCY PLAN

In accordance with VHWMR 40 CFR § 264.52 through 264.56; this Contingency Plan presents procedures and equipment maintained by the Norfolk Naval Shipyard (NNSY) in response to hazardous situations related to the permitted hazardous waste storage units; Hazardous Waste Storage Unit (HWSU) located at Building 506 and Mixed Waste Storage Unit (MWSU) located in Building 280. The purpose of this Plan is to minimize hazards to human health and the environment from fire, explosion, or any sudden or non-sudden release of hazardous wastes or their constituents to air, soil, or groundwater at the facility.

II.F.2. GENERAL INFORMATION

The primary mission of NNSY is to conduct manufacturing and maintenance activities for naval ships. In support of these activities, NNSY operates two permitted waste storage units. The HWSU has a maximum storage capacity of 86,240 gallons of hazardous waste. The MWSU in the west end bay has a maximum storage capacity of 29,480 gallons of mixed waste. The NNSY facility and permitted units are depicted in Permit Attachment II.A.

II.F.3. EMERGENCY COORDINATORS

The emergency coordinator or a designated alternate will be onsite or on call nearby at all times when waste is present at the facility. Emergency actions at NNSY are coordinated through the Navy Regional Fire-Rescue Hampton Roads, NNSY District (hereinafter referred to as “NNSY Fire Department”). The NNSY Fire Department is operated 24-hours a day, 7-days a week. The primary responsibility of the NNSY Fire Department is to act as NNSY first responders in accordance with Title 29 of the Code of Federal Regulations Part 1910.120 (29 CFR § 1910.120) for fire, explosion, hazardous material spill, and medical emergencies at NNSY. The NNSY Fire Department first responders will assume command of the emergency and will act as the Incident Commander (IC) until relieved by higher authority or until emergency response is terminated. Upon notification of an emergency, the NNSY Fire Department dispatcher will immediately notify a cognizant Code 106 Emergency Coordinator (EC).

The EC will respond with the NNSY Fire Department to provide technical support on the specific hazards, to determine if this Contingency Plan needs to be implemented, to ensure proper permit reporting is completed, and to prepare for post-emergency response actions. The EC will be on-site or on-call at all times. A list of the primary and alternate ECs contacts are provided in Table II.F-1. The NNSY Fire Department dispatcher also will immediately call the NNSY Duty Office. The NNSY Duty Office is operated 24-hours a day, 7-days a week. The

primary responsibility of the NNSY Duty Office is to act as the distributor of emergency response information to NNSY management and to coordinate additional resources, if needed. Additionally, for a mixed waste emergency, the NNSY Duty Office will inform senior Radiological Control Office personnel. A Radiological Control Office manager will report to the command location to provide technical support on the radiological aspects of the emergency. The NNSY Fire Department is located at Building 236 within the NNSY fence line. The NNSY Fire Department can be reached at (757) 396-3333 for emergencies or at (757) 396-3335 for non-emergencies.

II.F.4. IMPLEMENTATION CRITERIA

The decision to implement the Contingency Plan is made based on an evaluation of whether the incident has threatened or may threaten human health and/or the environment. The ability to contain a release on-site is not part of the evaluation criteria. The purpose of this section is to provide guidance to the IC and EC in making the decision to implement the Contingency Plan. Potential accidents fall under two general classifications: fire and/or explosion and spills or releases of hazardous materials. This Contingency Plan must be implemented under the following circumstances at either of the two permitted storage units.

- a. Fire/Explosion
 - i. A fire causes or has caused the release of toxic hazardous fumes, gases and/or vapors.
 - ii. The fire could spread to off-site areas.
 - iii. The fire spreads and/or could ignite materials at other locations or could cause heat-induced explosions.
 - iv. Use of water or chemical fire suppressant is expected to result in contaminated runoff.
 - v. An imminent danger exists that an explosion could occur, causing a safety hazard due to flying fragments or shock waves.
 - vi. An imminent danger exists that an explosion could ignite other wastes in the vicinity.
 - vii. An imminent danger exists that an explosion could result in the release of toxic hazardous materials.
 - viii. An explosion has occurred.

b. Spills/Leaks

- i. The spill is of such magnitude that a fire or explosion is imminent.
- ii. The spill causes the release of toxic hazardous liquids or fumes that threaten human health or the environment.
- iii. The spill results in groundwater or navigable surface water contamination or off-site soil contamination.

II.F.5. EMERGENCY ACTIONS

II.F.5.a. External Notification for Emergencies for Permitted Storage Units

External notification procedures detailed in this section apply to both permitted units. If the IC determines that the facility has had an incident that could threaten human health or the environment outside the NNSY boundaries; local, state, and federal authorities will be notified of the situation. Notification is made to local authorities listed in Table II.F-2 whenever their area of jurisdiction could be impacted by the incident. The EC is responsible for making the above notifications or ensuring notification is made.

- a. Notifications for emergencies where the Contingency Plan is implemented are made to the following organizations:
 - i. National Response Center (NRC) at (800) 424-8802 will be notified whenever the Contingency Plan is implemented.
 - ii. Virginia Department of Environmental Quality (DEQ) will be notified within 24 hours whenever the Contingency Plan is implemented or when any spill gets into a waterway (i.e., via a storm drain, water body). For such spills, within five business days, the EC will issue a written report to DEQ to support NNSY Virginia Pollutant Discharge Elimination System (VPDES) operating permits.

II.F.5.b. On-Site Notification for Emergencies at Hazardous Waste Storage Unit and Mixed Waste Storage Unit

Upon discovery of an emergency at either the Hazardous Waste Storage Unit (HWSU) or the Mixed Waste Storage Unit (MWSU), employees are instructed to pull the fire alarm and call the NNSY Fire Department. The fire alarm will signal an emergency throughout the building, and employees are to evacuate in accordance with Condition II.F.8. Once a fire alarm is pulled, the NNSY Fire Department is automatically notified. The telephone call to the NNSY Fire Department is designed as a backup in case the built-in circuit fails to function

properly and to provide the responders additional information about the emergency. While the NNSY Fire Department is en-route to the scene, the NNSY Fire Department dispatcher calls the EC and the NNSY Duty Office. The EC proceeds to the scene to assist the NNSY Fire Department first responders.

- a. For emergencies at the HWSU, the NNSY Duty Office begins notification of NNSY management to include:
 - i. Shipyard Commander
 - ii. Director, Occupational Safety, Health, & Environment Office
 - iii. Facilities & Maintenance Division
 - iv. Business & Strategic Planning Officer
 - v. Director of Security
 - vi. Production Resources Officer, NRRO, Naval Reactors Representative
 - vii. Base Support Officer
 - viii. Public Affairs Officer
 - ix. Group Superintendent Electrical/Structural Service
 - x. Supply Officer
- b. For emergencies at the MWSU, the NNSY Duty Office begins notification of NNSY management to include:
 - i. Shipyard Commander
 - ii. Director, Radiological Control Office
 - iii. Director, Occupational Safety, Health, & Environment Office
 - iv. Nuclear Production Officer
 - v. Facilities & Maintenance Division
 - vi. Business & Strategic Planning Officer
 - vii. Director Of Security

- viii. Production Resources Officer, NRRO, Naval Reactors Representative
- ix. Base Support Officer
- x. Public Affairs Officer
- xi. Group Superintendent Electrical/Structural Service
- xii. Supply Officer
- xiii. Nuclear Material Manager

II.F.5.c. Identification of Hazardous Waste

The EC, with assistance from the IC, the NNSY Fire Department, the facility operators, and the facility environmental engineering staff (as needed), will immediately attempt to identify the character, exact source, amount, and extent of any release. The initial identification will usually be visual identification of the leaking container. Identification procedures detailed in this section apply to both permitted units. If a release occurs that cannot be visually identified, analysis of the released material, consistent with the requirements of the Waste Analysis Plan, Permit Attachment II.B, will be performed to completely characterize the release. Only personnel that have been appropriately trained in spill awareness, response and hazardous waste handling will be allowed to sample containers. The responders will wear the proper personal protective clothing equipment and utilize only spark-free equipment. Additionally, waste materials collected as a function of spill response will be characterized for storage and disposal, to include analytical assessment as required by the specific situation.

II.F.5.d. Assessment

The EC, with assistance from the IC, the NNSY Fire Department, the facility operators, and the facility environmental engineering staff (as needed), will determine the appropriate actions to safely mitigate the hazardous materials incident. In particular, he or the EC must consider both direct and indirect effects of the release, fire, or explosion, including the possibility of toxic hazardous fumes and gases, contamination, runoff of firefighting water, and exposure of nearby buildings/personnel. Assessment procedures detailed in this section apply to both permitted units.

- a. IC will also conduct the following:
 - i. Attempt to determine the chemical(s) involved;
 - ii. Determine the quantity of the chemical(s) involved;

- iii. Obtain Safety Data Sheets (SDS) sheets on the chemical(s) involved;
- iv. Obtain all available information on the health hazards of the chemical(s) involved;
- v. Gather all available information on the physical and chemical properties of the chemical(s) involved and determine if it reacts with other products/chemicals;
- vi. Locate the source and evaluate potential for controlling or containing the released materials;
- vii. Determine the source(s) of the release/spill and the extent of contamination, if any;
- viii. Determine the need for evacuation; and
- ix. Determine the need for requesting emergency response assistance.

II.F.6. CONTROL PROCEDURES

Potential accidents fall under two general classifications, fire and/or explosion and spills or releases of hazardous wastes. Control procedures detailed below apply to both permitted units.

II.F.6.a. Fire and/or Explosion

In the event of a major emergency involving a fire or explosion, the notification procedures of Condition II.F.5 will be used for rapid and safe response to the situation for both permitted units. The NNSY Fire Department will respond to and be on-hand for all fire or explosion emergencies. The permitted units can be easily accessed by firefighting and emergency equipment vehicles. Fire hydrants are immediately adjacent to each building containing the permitted unit. The area directly outside of and leading to these areas is paved and access into the units themselves is facilitated by a vehicle ramp. Roadways leading to the areas are kept clear at all times. If a fire should break out, NNSY Fire Department personnel will concentrate on containing and extinguishing the fire.

- a. Water reactive wastes are stored in over-pack containers for added spill protection. The specific steps taken by the NNSY Fire Department personnel are outlined in the firefighting procedures. The steps include the following:
 - i. Discontinue all hazardous material handling activities in the area;

- ii. All injured persons will be removed, and medical treatment will be administered by qualified personnel;
- iii. The area will be cleared of all personnel not actively involved in fighting the fire;
- iv. Vehicular traffic in the area will be ceased;
- v. Possible sources of ignition will be removed. This is particularly important in instances where spills or discharges of flammable or ignitable materials have occurred, but a fire has not yet started;
- vi. If necessary, evacuate the facility and/or surrounding area in accordance with Condition II.F.8; and
- vii. Cover nearby storm drains as necessary.

The NNSY Fire Department will be responsible for all firefighting efforts. Supervisors of unaffected areas will stay with their personnel and be ready to evacuate and account for the persons under their supervision. An all-clear signal will be given when the fire has been extinguished and the safety of personnel is no longer endangered. The IC will determine when the emergency has passed and consult with the EC before the all-clear signal is given. All emergency equipment used in the emergency must be cleaned and made fit for use prior to resumption of operations in the affected areas.

II.F.6.b. Spills or Material Release

In the event of a major emergency involving a chemical spill or discharge release, the notification procedures of Condition II.F.5 will be used for rapid and safe response to the situation. The NNSY Fire Department is called and responds to all spills or release of hazardous materials for both permitted units at the NNSY, regardless of size.

- a. When contacted, the NNSY Fire Department will obtain all available information pertaining to the incident as follows:
 - i. The material released or spilled;
 - ii. The location of the spill or release;
 - iii. The quantity of material spilled and the rate at which it is being released, if the event is continuing;
 - iv. Any injuries involved;

- v. The direction in which any released liquid and/or vapor generated is flowing;
- vi. The potential for fire or explosion;
- vii. The area and materials involved;
- viii. The name, location, and contact information of the notifier (and how they can be reached); and
- ix. Action already implemented or planned to be implemented by the person(s) on the scene.

The NNSY Fire Department will respond and then relay this information to the NNSY Duty Office. If any of the above information is not available from the person reporting the spill, the IC will obtain above information upon arrival at the scene. The IC will relay the information to the NNSY Duty Office. The NNSY Duty Office will complete the reporting to NNSY management. The initial response to any emergency will be to protect human health and safety and then the environment. Identification, containment, treatment, and disposal assessment will be the secondary response.

Once on scene, the NNSY Fire Department will initiate attempts to control the scene and mitigate the emergency. If the IC determines that additional response is necessary, assistance from an internal or external hazardous materials spill response team will be called upon. The spill response team will be more fully equipped to stabilize and clean up the spill.

- b. The following steps should shall be taken, as applicable, in response to a spill:
 - i. Control the source (close valve, plug, turn container, etc.) or contain the spill by berming, and diking;
 - ii. Transfer leaking containers to over-pack containers;
 - iii. When appropriate, pump contents from leaking containers into Department of Transportation (DOT) approved containers;
 - iv. Use simple neutralization only under the direction of a trained professional;
 - v. Use absorbent material to contain and solidify liquid; and
 - vi. Place all solidified spill material and contaminated spill debris in

containers.

If a waste spill is not contained within a storage area, an area of isolation will be established around the spill with hazardous material containment dikes or absorbent materials. The size of the area will generally depend on the extent of the spill and the materials involved. When any spill occurs, only those persons involved in overseeing or performing emergency operations will be allowed within the designated hazardous area. If possible, the area will be roped or otherwise blocked off using security personnel.

Appropriate first responders or post-emergency response cleanup personnel will collect released wastes and place the material in containers for proper disposal. The NNSY Fire Department Hazardous Material Vehicle will support operations at the scene. Table II.F-3 includes a list of inventory materials that are likely to be in the inventory of the Hazardous Material Vehicle.

If a spill results in the formation and release of a hazardous toxic vapor cloud, due to high vapor pressure under ambient conditions and reaction with surrounding materials or by the outbreak of fire, evacuation will be conducted in accordance with the procedures described in Condition II.F.8. The EC will initiate all required notifications for a spill of a Reportable Quantity (RQ) of a hazardous substance or for spills of a hazardous waste as described in Condition II.F.5.

II.F.6.c. Prevention of Recurrence or Spread of Fires, Releases, or Explosions

Actions undertaken by the IC to prevent recurrence or spread of fires, explosion, or releases include stopping processes and operations, collecting and containing released waste, and recovering or isolating containers. When operations are stopped at the permitted unit in response to the emergency, the IC and/or EC (post-emergency response) shall monitor for leaks, pressure buildup, gas generation, or rupture in valves, pipes, or other equipment wherever this is appropriate. In the case of a release from a typical 55-gallon container, the Hazardous Waste handler trained in spill response is to take safe actions to minimize release and immediately notify the appropriate officials via the fire department dispatcher. If ignitable wastes are involved, all ignition sources will be removed. Spark-and explosion-proof equipment and clothing will be used in the containment and cleanup areas. All other surrounding materials that could be especially reactive with materials in the waste will be removed from the area. Table II.F-3, lists the emergency response equipment inventoried monthly and verified in a satisfactory-for-use condition.

II.F.6.d. Storage and Treatment of Released Material

All spilled material, cleanup debris and contaminated soil is to be containerized in the proper DOT shipping container and stored in the appropriate permitted unit.

Storage of this material is only allowed under the Permit pending shipment via hazardous waste transporter to an approved off-site treatment or disposal facility. All spill residues and debris will be disposed of as hazardous waste or mixed waste, carrying waste codes or characterization similar to the spilled materials. All post-emergency waste storage and disposal will be in accordance with the Permit.

If structures within the vicinity of the permitted unit(s) are involved in the emergency and have been contaminated, the area will be cleaned using an appropriate cleaning agent to decontaminate the structure and a water rinse will follow. Rinsing will continue until no contaminants from the release are detected in the rinse water. Collected cleaning solutions and rinse water will be containerized and managed as a hazardous waste. Contaminated soils will be excavated, placed in containers, and sent to an approved off-site treatment or disposal facility. Excavation of soils will continue until confirmation soil sampling shows that all contamination has been removed.

II.F.6.e. Incompatible Wastes

The EC will ensure that released material incompatible with other wastes is segregated during temporary storage and that incompatible wastes are not accidentally mixed during cleanup. Only trained first responders or trained hazardous waste or mixed waste handlers will be allowed to handle the wastes involved. All potentially incompatible wastes are segregated pursuant to procedures specified in Module II, Permit Attachment(s) II.E and II.F. The EC shall ensure that, in the affected areas of the facility, no waste that may be incompatible with the released materials is treated, stored, or disposed of until cleanup procedures are completed. The procedures detailed in this section apply to both permitted units.

II.F.6.f. Post-Emergency Equipment Maintenance

After an emergency event, all emergency equipment will be decontaminated so that it is suitable for reuse or it will be replaced. Expendable items used in the cleanup process during an emergency, such as mops, brooms, gloves, boots, coveralls, etc., will be containerized and disposed of as hazardous waste or mixed waste. Reusable equipment will be decontaminated by washing the equipment in a suitable cleaning agent and rinsing it with tap water so that it is fit for use, or it will be replaced. All wash and rinse water will be containerized and disposed of as hazardous waste or mixed waste. The procedures detailed in this section apply to both permitted units.

II.F.6.g. Container Spills and Leakage

If a container holding hazardous waste or mixed waste is not in good condition

(e.g., severe rusting, damage, apparent structural defects) or if it begins to leak, the waste will be transferred by trained first responders or by trained hazardous waste or mixed waste personnel operators to a container that is in good condition. Alternatively, an over-pack container may be used. The over-pack container will be labeled and marked in accordance with DOT and other permit conditions.

II.F.7. EMERGENCY EQUIPMENT

II.F.7.a. Hazardous Waste Storage Unit Emergency Equipment

In case of fire, explosion, or release of hazardous waste, Table II.F-4 lists the firefighting, containment, and emergency equipment that is available at the Hazardous Waste Storage Unit (HWSU) and their capabilities.

II.F.7.b. Mixed Waste Storage Unit Emergency Equipment

In case of fire, explosion, or release of mixed waste, Table II.F-5 lists the firefighting, containment, and emergency equipment is available at the Mixed Waste Storage Unit (MWSU) and their capabilities.

II.F.7.c. Coordination Agreements

NNSY maintains on station at all times fire and security forces that are familiar with the layout and operations of both permitted units. Additionally, mutual aid agreements are in place between the Navy Regional Fire Rescue and the city fire departments of Chesapeake, Suffolk, Portsmouth, and Norfolk. In these agreements, the senior fire-fighting officer present may request assistance from any other fire department that is part of the agreement. The Fire Department is charged with keeping these agreements up to date and developing the liaison between the facility and the other fire department to ensure effective response. A mutual aid agreement has also been established between the NNSY, the Norfolk Naval Shipyard Branch Medical Clinic, the Naval Medical Center in Portsmouth, and Sentara Norfolk General Hospital. This agreement establishes responsibilities for medical support of the Naval Nuclear Propulsion Program at the shipyard. Local police departments and hospitals have been briefed on the contents of this contingency plan through the Portsmouth Local Emergency Planning Committee (LEPC.) NNSY is an active member of the LEPC, working closely with the committee to hold hazardous material drills and improve emergency coordination. Copies of the current mutual aid agreements are included in Appendix II.F-1.

A copy of the Contingency Plan will be maintained at the permitted units. Copies of the Contingency Plan will also be sent to the NNSY Fire Department and the Navy On-Scene Coordinator (NOSC).

II.F.8. EVACUATION PLAN

II.F.8.a. Building Evacuation

Once the fire alarm sounds at one of the permitted units, the employees are instructed and trained to evacuate the building in accordance with the pre-planned routes. When needed, the NNSY Fire Department dispatch will notify security to report to the emergency command post. Security personnel will secure the area, limiting access to trained spill responders only.

- a. The Hazardous Waste Storage Unit (HWSU's) primary evacuation route is north on Williams Avenue to the intersection of Marshall Street. The secondary evacuation route is south on Williams Avenue to the north end of Building 1460. The evacuation routes and assembly points are shown in Figure II.F-1.
- b. The Mixed Waste Storage Unit (MWSU's) primary evacuation route is east on Marshall Street to the intersection of Williams Avenue. The secondary evacuation route is west on Marshall Street to the northwest corner of Building 276. The evacuation routes and assembly points are shown in Figure II.F-2.
- c. Personnel outside the evacuated unit are directed to an upwind position.
- d. Facilities within the immediate area will be notified by security personnel vehicle loud speakers and/or the NNSY Duty Office to stand clear and to be prepared for evacuation, if subsequently notified.

II.F.8.b. Additional Shipyard Evacuation

The IC, with assistance from the EC, is responsible for determining whether further evacuations are necessary. If additional evacuation beyond assembly points is necessary, occupants are advised by security, NNSY Duty Office, and/or fire personnel to evacuate the immediate vicinity. All evacuation instructions are communicated by voice, telephone, or other means to ensure the safety of personnel. Basic requirements for evacuation from the units are to remove all unnecessary personnel away from the immediate area using the general routes above to a position upwind. If the incident is more severe and is considered to be toxic or life threatening, then a more extensive evacuation, as directed by the IC, shall be accomplished. Notification will be made by Fire/Security Department loud speakers or NNSY Duty Office call-back procedures.

Guidelines for each permitted unit evacuation are as follows: Security and/or NNSY Fire Department personnel, under the direction of the IC, will establish a total security perimeter to isolate the affected area and allow no one except

emergency response personnel to enter. Security personnel shall be positioned out of the direct downwind locations but must maintain line-of-site control of the area to established area perimeters or shipyard fences. All personnel have been trained in evacuation procedures and the means of exit from their respective work areas. Until evacuation is signaled, personnel who are not in an affected area will stay in their work areas.

II.F.8.c. Evacuation Outside the Shipyard Boundaries

If the IC determines that the permitted unit has had an incident that could threaten human health or the environment outside NNSY boundaries; local, state, and federal authorities will be notified of the situation in accordance with Condition II.F.5. If the evacuation of local areas outside the NNSY may become advisable, the IC or EC shall immediately notify appropriate local authorities listed in Table II.F-2.

Only authorities in areas impacted by the situation need to be notified (e.g., if the situation does not involve the City of Portsmouth, they do not need to be notified, etc.) The IC and/or EC shall assist local officials in deciding local areas that should be evacuated.

- a. The notification to local authorities listed in Table II.F-1 shall include:
 - i. Name and telephone number of the notifier;
 - ii. Name and address of the facility;
 - iii. Time and type of incident;
 - iv. Name and quantity of material(s) involved, to the extent known;
 - v. The extent of injuries, if any; and
 - vi. The possible hazards to human health or the environment outside the facility.

II.F.9. **REQUIRED REPORTS**

All emergencies that require implementation of the Contingency Plan are reported within 15 days to the DEQ for both permitted units.

- a. The report will be in writing and include the following:
 - i. Name, address, and telephone number of the owner/operator;

- ii. Name, address, and telephone number of the facility;
 - iii. Date, time, and type of incident (e.g., fire, explosion);
 - iv. Name and quantity of material(s) involved;
 - v. The extent of injuries, if any;
 - vi. An assessment of actual or potential hazards to human health or the environment, where this is applicable; and
 - vii. Estimated quantity and disposition of recovered material that resulted from the incident.
- b. All spills that require implementation of the Contingency Plan or that get into a waterway will be reported within five (5) days to DEQ for both permitted units. The report will be in writing and include the following in accordance with 9VAC25-151-70(g) Title 9 Code of Virginia Agency 25 Chapter 151 Section 70(g):
- i. A description of the nature and location of the discharge;
 - ii. The cause of the discharge;
 - iii. The date on which the discharge occurred;
 - iv. The length of time that the discharge continued;
 - v. The volume of the discharge;
 - vi. If the discharge is continuing, how long it is expected to continue;
 - vii. If the discharge is continuing, what the expected total volume of the discharge will be; and
 - viii. Any steps planned or taken to reduce, eliminate, and prevent a recurrence of the present discharge or any future discharges not authorized by this permit.

II.F.10. AMENDMENT OF THE CONTINGENCY PLAN

The contingency plan will be reviewed and immediately amended if necessary whenever:

- a. The facility permit is revised;

- b. The plan fails in an emergency;
- c. The design, construction, operation, or maintenance of the facility is changed in a way that materially increases the potential for fires, explosions, or releases in hazardous waste or hazardous waste constituents, or changes in the response necessary in an emergency;
- d. The list of Emergency Coordinators changes; or
- e. The list of emergency equipment changes.

Table II.F-1: Primary and Alternate Emergency Coordinators' Contact Information

Role	Name	Work Address:	Work Phone:	Mobile Phone:
Primary	Amos T. Webb	Bldg. M-22, Code 106 Norfolk Naval Shipyard Portsmouth, VA 23709	(757) 396-4158	(757) 284-8815
Alternate	William H. Johnson	Bldg. M-22 Code 106 Norfolk Naval Shipyard Portsmouth, VA 23709	(757) 396-4452	(757) 353-9639
Alternate	Timothy A. Sawyer	Bldg. M-22, Code 106 Norfolk Naval Shipyard Portsmouth, VA 23709	(757) 396-3456	(757) 297-0355

Table II.F-2: List of Local Authorities Notification

TABLE GG-1 LOCAL AUTHORITIES NOTIFICATION LIST	
City of Portsmouth Local Emergency Planning Committee Chairman	(757) 636-8803 (c)
Commonwealth of Virginia Department of Emergency Management	(757) 897-6500 (804)
Commonwealth of Virginia Emergency Response Team	(800) 468-8892
National Response Center	(800) 424-8802
City of Portsmouth Civil Defense Emergency Operations Center Risk	(757) 393-5300
City of Chesapeake Emergency Preparedness/Communication/Risk Management	(757) 382-6193 (757) 382-6161
City of Norfolk Department of Emergency Services	(757) 441-5610
U.S. Coast Guard	(757) 668-5555
Virginia Department of Environmental Quality / Tidewater Regional Office	(757) 518-2000

Table II.F-3: NNSY Fire Department Material Vehicle Inventory

<p align="center">TABLE GG-2 Fire Department Hazardous Material Vehicle Inventory The following list of emergency response equipment shall be inventoried monthly and verified in a satisfactory-for-use condition.</p>		
1	DOT Emergency Response Guide	
1	Binocular	
1	Set of Equipment Needed to Establish a Full Decontamination Line	
1	Dry Powder Fire Extinguisher	
2	Rolls Boundary Tape	
2	Drain Mats	
5	Bags Stay Dry	
8	Breathing Air Bottles	
4	Complete Breathing Air Apparatus	
1	Set NNSY Storm Drain Maps	
1	Container Acid Neutralizer	
1	Container Base Neutralizer	
1	Roll Oil Absorbent Material	
1	Over Pack Container	
1	Assorted Non-Sparking Tools	
2	Shovels	
1	Push Broom	
1	Roll pH Indicating Tape	
1	Box Tyvek/Saranex Suits	
1	Atmospheric Gas Analyzer	
Date of Inspection:		
Name of Inspector:		
Signature:		
This inventory for the Fire Department Hazmat Vehicle Inventory may be added to, not deleted, as technology improves and better equipment becomes available.		

Table II.F-4: Spill Response, Equipment and Material Hazardous Waste Storage Unit

Description	Capabilities
Industrial Absorbent	To contain or absorb spills
Absorbent Pads	To contain or absorb spills
Clean-up Rags	To contain or absorb spills
Containers	To contain used spill response materials or to overpack a leaking container
Face Shields	Chemical resistant for splash hazards
Safety Goggles	For eye protection from flying objects and protection from chemical splashes
Emergency Shower and Eyewash	For flushing exposed skin and clothing areas and to wash PPE, suits, and equipment
Dry Chemical Fire Extinguishers	To respond to small fires
Fire Alarm System	For emergency signal
Protective Clothing (impermeable coveralls, gloves, and boots)	To protect personnel from dermal exposure
Nylon Rope	To prevent unauthorized entry
Tape	To seal bags that contain spill material
Indelible Markers	To identify contents from the spill
Shovels	For shoveling spilled materials and absorbent
Sweep Pans	To control spills and for clean-up
Hand-Held Two-Way Radios	To request assistance during an emergency

Table II.F-5: Spill Response, Equipment and Materials for the Mixed Waste Storage Unit

Description	Capabilities
Industrial Absorbent	To contain or absorb spills
Absorbent Pads	To contain or absorb spills
Clean-up rags	To contain or absorb spills
Containers	To contain used spill response materials or to overpack a leaking container
Face Shields	Chemical resistant for splash hazards
Safety Goggles	For eye protection from flying objects and protection from chemical splashes
Emergency Eyewash	For flushing exposed eyes and skin
Carbon Dioxide Fire Extinguishers	To respond to small fires
Fire Alarm System	For emergency signal
Protective Clothing (impermeable coveralls, gloves, and boots)	To protect personnel from dermal exposure
Tape	To seal bags that contain spill material
Indelible Markers	To identify contents from the spill
Scissors	For sizing materials
Sample Data Labels	For labeling samples
Shovels	For shoveling spilled materials and absorbent
Sweep Pans	To control spills and for clean-up
Telephone	To request assistance during an emergency

Note: Emergency equipment is maintained and will remain current with respect to improved technology.

Figure II.F-1: Evacuation Route – Hazardous Waste Storage Unit (Bldg. 506)

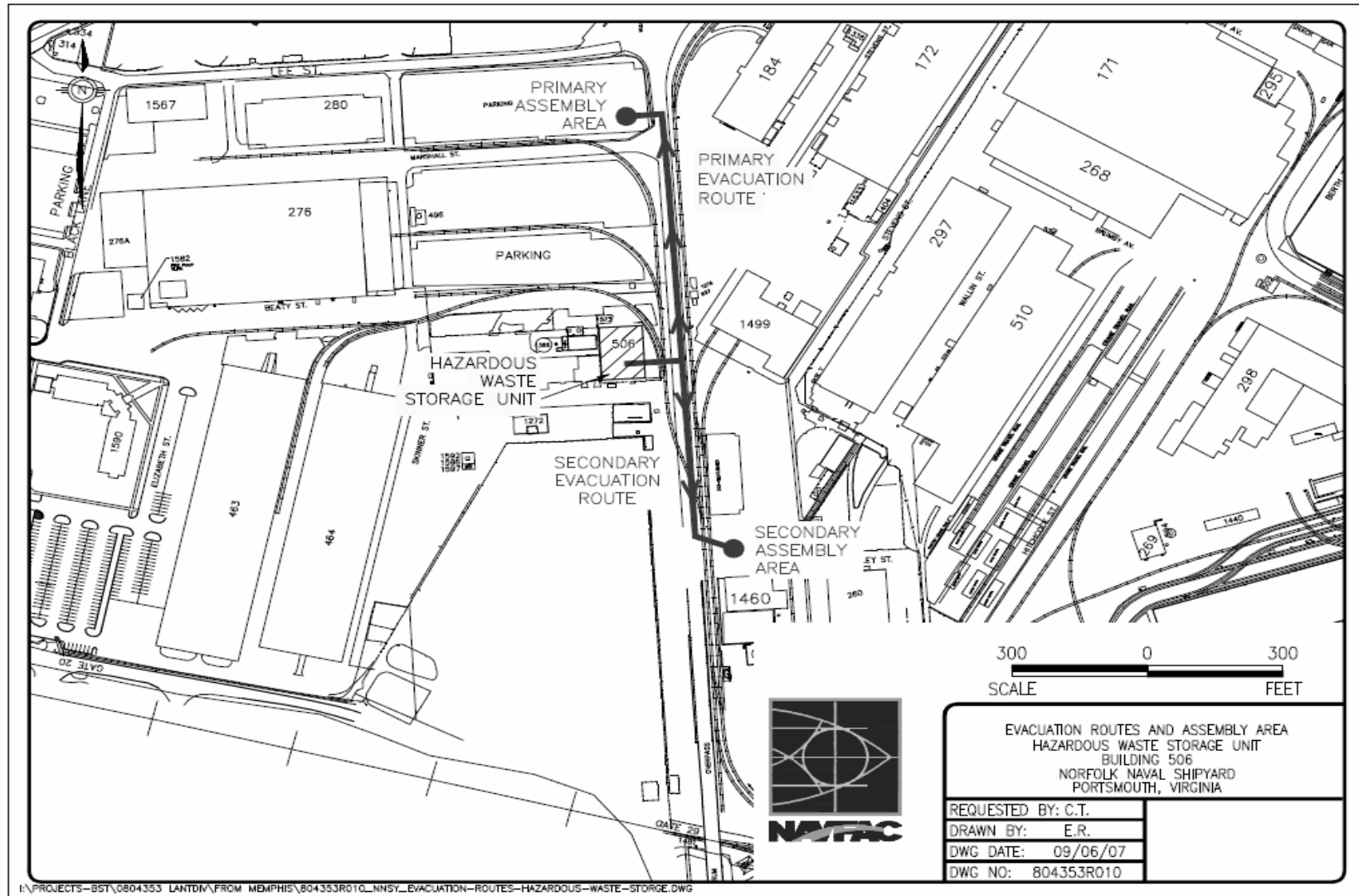
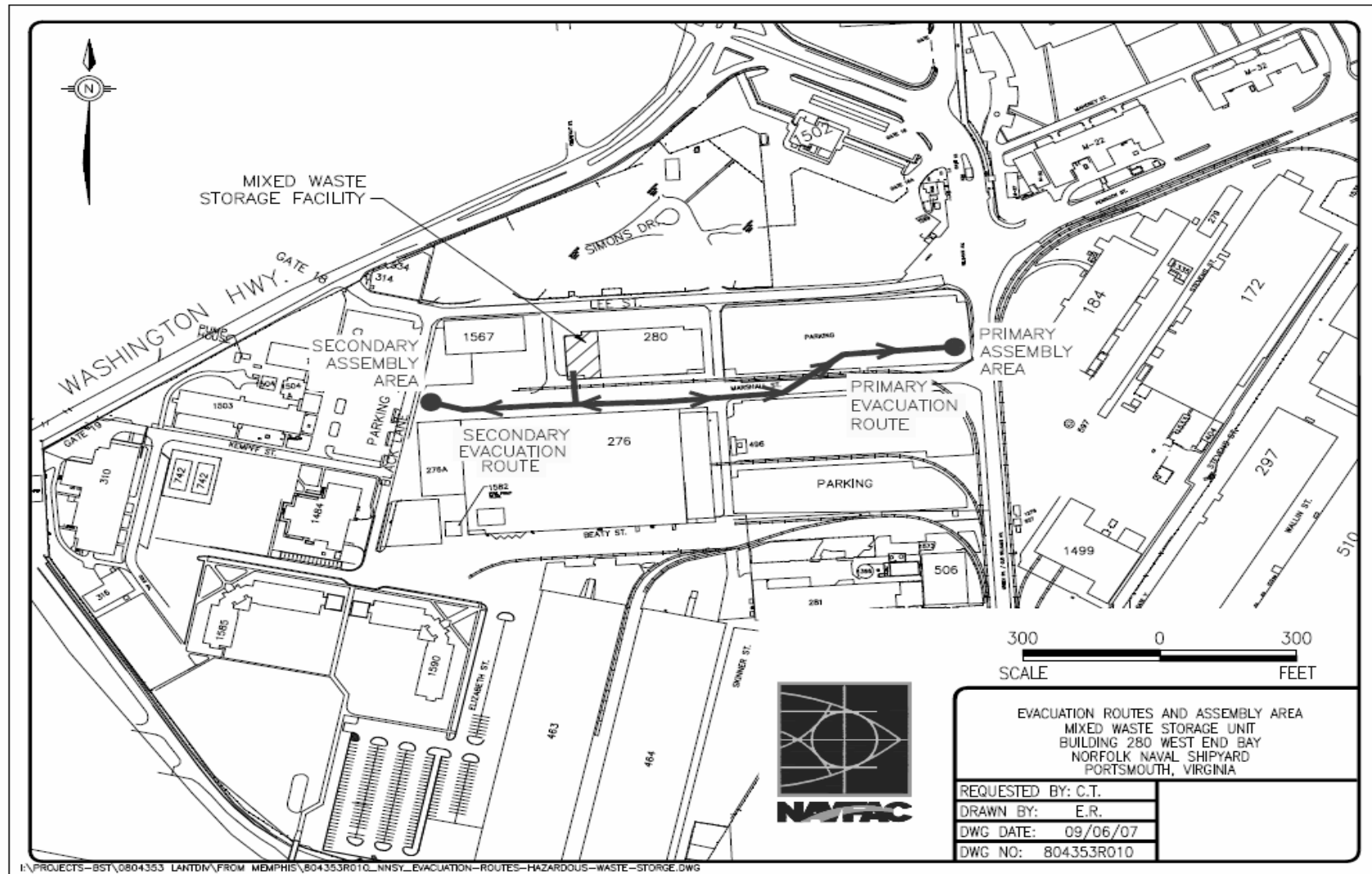


Figure II.F-2: Evacuation Route – Mixed Waste Storage Unit (Bldg. 280)



Appendix II.F-1: Mutual Aid Agreements

ENTITY	DATE OF AGREEMENT	SERVICES INCLUDED
City of Portsmouth	June 1 st , 2009	Fire, Medical, and Hazardous Materials Response Capabilities. Capabilities for Special Rescue Events.
City of Norfolk	May 11 th , 2009	Fire, Medical, and Hazardous Materials Response Capabilities. Capabilities for Special Rescue Events.
City of Chesapeake	June 13 th , 2012	Fire, Medical, and Hazardous Materials Response Capabilities. Capabilities for Special Rescue Events.
City of Suffolk	May 20 th , 2009	Fire, Medical, and Hazardous Materials Response Capabilities. Capabilities for Special Rescue Events.
City of Virginia Beach	August 24 th , 2009	Fire, Medical, and Hazardous Materials Response Capabilities.
City of Newport News	February 14 th , 2007	Fire, Medical, and Hazardous Materials Response Capabilities. Capabilities for Special Rescue Events.
City of Hampton	August 20 th , 2008	Fire, Medical, and Hazardous Materials Response Capabilities. Capabilities for Special Rescue Events.
James City County	January 28 th , 2020	Fire, Medical, and Hazardous Materials Response Capabilities. Capabilities for Special Rescue Events.
Federal FES Virginia Peninsula Region	October 14 th , 2004	Aid as outlined in Department of Defense Instruction (DoDI) 6055.6, DoD Fire and Emergency Services Program.
Medical Transport LLC, Virginia Beach	January 12 th , 2010	Ambulance Support, Pre-hospital treatment (Basic and Advanced Life Support).
CNRMA and MRST Dive Team East	May 23 rd , 2011	Support for diving related injuries and hyperbaric chamber usage.

ATTACHMENT II.G - Closure Plan

Much of the following text was excerpted from Norfolk Naval Shipyard's Permit Renewal Application. The original formatting and numbering scheme have been modified to conform to this permit.

II.G.1. CLOSURE, POST-CLOSURE AND FINANCIAL REQUIREMENTS

In accordance with the Virginia Hazardous Waste Management Regulations (VHWMR), codified in the Virginia Administrative Code (VAC) as 9 VAC 20-60, and in accordance with Title 40 of the Code of Federal Regulations, Part 264 (40 CFR § 264), Attachment II.G of this Permit includes the closure and post-closure care requirements for the Hazardous Waste Storage Unit (HWSU) and the Mixed Waste Storage Unit (MWSU), (hereinafter referred to as permitted units) at the Norfolk Naval Shipyard (NNSY) in Portsmouth, Virginia.

This Closure Plan includes:

- a. A description of the closure performance standard to minimize the need for post-closure maintenance and release of wastes
- b. A closure schedule for each storage unit
- c. Plans for disposal or decontamination of equipment, structures, and soil (if applicable)
- d. Requirements for post-closure or contingent post-closure care
- e. Closure certification requirements

40 CFR § 264.140(c) exempts the federal government from all financial requirements (Subpart H) of the hazardous waste regulations.

This Closure Plan identifies all steps that will be necessary to close the facility permitted units at any point during its operating life and to completely close the facility permitted units at the end of its intended operating life. The Closure Plan also addresses the conditions and reasons under which partial closure will occur. NNSY will maintain an on-site copy of the approved Closure Plan and all revisions to the plan until the certification of closure completeness has been submitted and accepted by the Virginia Department of Environmental Quality (DEQ). NNSY will notify the DEQ in writing at least 45 days prior to the date on which partial or final closure of the facility is expected to begin. The dates for closure of the permitted units are indefinite and not expected to occur for at least 50 years. Upon completion of closure, NNSY will submit to the Director a certification by both NNSY and an independent professional engineer (P.E.)

licensed in Virginia that the facility permitted unit has been closed in accordance with the specifications in the approved Closure Plan.

II.G.1.a. Closure Performance Standard

Pursuant to 40 CFR §264.111, closure for the permitted units shall be conducted in a manner that minimizes the need for further maintenance and controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous waste constituents, leachate, contaminated runoff, or waste decomposition products to the ground, surface waters, or the atmosphere. The closure shall also comply with the closure standards of 40 CFR Subpart G and the requirements of 40 CFR §264.178.

NNSY will meet this closure performance standard by removing and disposing of all hazardous wastes and hazardous waste residues as specified in Condition II.G.1.e.1 of this Closure Plan.

II.G.1.b. Partial and Final Closure Activities

Partial closure of the permitted units is not planned; however, in the event that future circumstances or decisions force the discontinuation of one of the storage units, Condition II.G.1.e of this Closure Plan presents procedures for partial and final closure of each of the permitted units.

Closure will include the transportation of decontamination residuals to an appropriate disposal facility. Once closure activities commence, with the exception of decontamination residuals, no additional wastes will be managed within the boundaries of the unit undergoing closure. Condition II.G.1.e provides additional details on closure activities.

II.G.1.c. Maximum Waste Inventory

During the operating life of the units, the maximum inventory of wastes in each permitted unit will be:

- a. Hazardous Waste Storage Unit (HWSU): Each row of containers may be stacked to a height of two containers. As presented in Figure II-E.1, a maximum of 1,568 55-gallon containers may be stored in the HWSU.

(86,240 gallons storage capacity)(1 container/55 gallons) = 1,568 55-gal. containers.

- b. Mixed Waste Storage Unit (MWSU): Each row of containers may be stacked to a height of two containers. As presented in Figure II-E-2, a maximum of

536 55-gallon containers may be stored in the Mixed Waste Storage Unit.

(29,480 gallons storage capacity)(1 container/55 gallons) = 536 55-gal. containers.

II.G.1.d. Schedule for Closure

Within 90 days after receipt of the final volume of hazardous or mixed wastes, all hazardous or mixed wastes will be removed from permitted site. NNSY will notify the DEQ in writing at least 45 days prior to the expected date of closure. The proposed schedules for closure of the permitted units are shown in Tables II.G-1 and II.G-2, respectively. Closure will be completed within 180 days after receiving the final volume of wastes. Final closure will be supervised and certified by a P.E. licensed in Virginia, in addition to the owner or operator.

II.G.1.d.1. Time Allowed for Closure

Within 90 days after receiving the final volume of hazardous or mixed wastes, all hazardous or mixed wastes will be removed from the permitted site. Closure will be completed within 180 days after receiving the final volume of waste.

II.G.1.d.1.a. Extensions for Closure Time

At the time of closure, NNSY may request a time extension pursuant to 40 CFR § 264.113. Closure activities will be supervised and certified by a P.E. licensed in Virginia, in addition to the owner or operator.

II.G.1.e. Closure of Hazardous Waste Storage Unit and Mixed Waste Storage Unit

II.G.1.e.1. Inventory Removal

The final inventory of wastes will be removed from the permitted units and transported to a permitted treatment, storage, and disposal facility for treatment or disposal. All containers will be sealed and labeled prior to shipment. Disposal or transfer of all wastes will be completed within 90 days from the date the final volume of waste is received.

II.G.1.e.2. Disposal or Decontamination of Equipment, Structures, and Soil

This section provides the detailed procedures for how the permitted units will be closed in accordance with the closure performance standard of 9 VAC 20-60 and 40 CFR § 264 Subpart G. Closure of the permitted units will be conducted in a manner which ensures removal of all wastes and complete decontamination of the containment areas and all associated equipment, which were in contact with hazardous wastes. Closure procedures will be conducted by NNSY or contract

personnel following comprehensive safety procedures to ensure personnel safety during cleanup. All cleanup work will be supervised and performed using properly qualified and trained personnel. As necessary, personnel will be equipped with appropriate personal protective equipment (PPE).

II.G.1.e.2.a. Closure Procedures

Hazardous Waste Storage Unit

Specific closure procedures for the HWSU are as follows:

- a. All containers of hazardous waste will be removed and transported by a licensed transporter to an appropriately permitted treatment or disposal facility. The permitted unit will be visually inspected for spilled or leaked waste, and, if any is found, it will be cleaned up as discussed in the Contingency Plan to this Permit (Attachment II.F). No contamination is expected, because spills are cleaned up as they occur.
- b. The entire secondary containment walls and floor will be cleaned with stiff brooms. The containment floor will then be inspected for cracks, gaps, expansion joints, construction joints, and any other route representing potential pathways to the underlying gravel backfill. All cracks in the containment will be identified and filled with a sealant material.
- c. The containment floor will be scrubbed with detergent and water, and the wash solution will be collected in containers and/or a bulk-tank truck.
- d. The entire secondary containment surface will be further rinsed with a high-pressure, low-volume water spray. The specifications for the pressure cleaner will be a minimum achievable pressure of 2,000 pounds per square inch (psi) and a flow rate of less than 10 gallons per minute (gpm). Approximately 0.25 gallon per square foot (psfg/ft²) of surface will be used for the pressure wash. The rinse water will be collected separately from the wash water in containers and/or bulk-tank truck.
- e. Wash and rinse water will be managed as hazardous waste and transported off-site to a permitted hazardous waste management facility. Alternatively, a representative sample of each solution may be analyzed, as specified in Condition II.G.1.e.2.c and analytical results compared to the closure decontamination standard, as specified in Condition II.G.1.e.2.g. Solutions, which do not demonstrate the closure decontamination standard, will be managed as hazardous waste and transported off-site to a permitted hazardous waste management facility. Solutions, which do demonstrate the decontamination standard, may be disposed as non-hazardous wastewater.

- f. A representative sample of the rinsate from Step 4, above, will be analyzed as specified in Condition II.G.1.e.2.c. Analytical results will be used to determine whether the containment surface meets the closure decontamination standard as specified in Condition II.G.1.e.2.g. If the rinsate does not demonstrate the closure decontamination standard, the containment rinsing procedure above will be repeated until the decontamination standard is met. Alternatively, the containment may be disposed in accordance with procedures specified in Condition II.G.1.e.2.h.
- g. After decontamination procedures of Step 6 above have been completed, any previously identified cracks or gaps will be further investigated. The concrete will be chipped to the bottom of the crack and for three inches on either side of the crack. If the crack breaches the concrete, samples will be obtained from the underlying fill material beneath the crack. Samples of the underlying fill material must also be obtained, if the containment surface has not demonstrated the closure decontamination standard. The fill material will be sampled and analyzed as specified in Condition II.G.1.e.2.c. Analytical results will be used to determine whether the fill material meets the closure decontamination standard as specified in Condition II.G.1.e.2.g.
- h. Should fill material samples not meet the closure decontamination standard, additional sampling and analysis followed by fill removal, will be undertaken until all contaminated fill is identified and removed. Procedures for fill sampling and removal will be as specified in Condition II.G.1.e.2.f.
- i. There was a pre-existing hazardous waste container storage unit at the location of the permitted HWSU. The pre-existing unit consisted of a curbed asphalt pad, which was underlain by a concrete base. Beginning in 1991, the area was upgraded to its current configuration. At that time gravel backfill was placed over the asphalt, a new concrete base was poured, and the new eight bay storage unit was constructed on top of the original storage unit. Because the asphalt was used for waste containment, samples of the asphalt pad and the concrete and soils beneath the asphalt pad must be obtained and analyzed. Sampling and analysis of these underlying materials will occur after completion of decontamination or removal of the overlying Hazardous Waste Storage HWSU Unit containment.
- j. The asphalt, concrete, and soil will be sampled and analyzed as specified in Condition II.G.1.e.2.c. Analytical results will be used to determine whether these materials meet the closure decontamination standard as specified in Condition II.G.1.e.2.g.
- k. Should samples from any of the underlying materials not meet the closure decontamination standard, additional sampling and analysis, followed by removal, will be undertaken until all contaminated material is identified and

removed. Procedures for sampling and removal will be as specified in Condition II.G.1.e.2.f.

Mixed Waste Storage Unit

Specific closure procedures for the MWSU are as follows:

- a. All containers of mixed waste will be removed and transported by a licensed transporter to an appropriately permitted treatment or disposal facility. The permitted unit will be visually inspected for spilled or leaked waste, and, if any is found, it will be cleaned up as discussed in the Contingency Plan to this Permit (Attachment II.F). No contamination is expected, because spills are cleaned up as they occur.
- b. The entire secondary containment walls and floor, including the loading platform, will be cleaned with stiff brooms. The containment floor will then be inspected for cracks, gaps, expansion joints, construction joints, and any other route representing potential pathways to the underlying soil. All cracks in the containment will be identified and filled with a sealant material.
- c. The containment floor will be scrubbed with detergent and water, and the wash solution will be collected in containers and/or a bulk-tank truck.
- d. The entire secondary containment surface will be further rinsed with a high-pressure, low-volume water spray. The specifications for the pressure cleaner will be a minimum achievable pressure of 2,000 psi and a flow rate of less than 10 gpm. Approximately 0.25 gallon psf g/ft² of surface will be used for the pressure wash. The rinse water will be collected separately from the wash water in containers and/or a bulk-tank truck.
- e. If released from radiological control, wash and rinse water will be managed as hazardous waste and transported off-site to a permitted hazardous waste management facility. Alternatively, a representative sample of each solution may be analyzed, as specified in Condition II.G.1.e.2.c, and analytical results compared to the closure decontamination standard, as specified in Condition II.G.1.e.2.g. Solutions, which do not demonstrate the closure decontamination standard, will be managed as hazardous waste and transported off-site to a permitted hazardous waste management facility. Solutions, which do demonstrate the decontamination standard, may be disposed as non-hazardous wastewater.
- f. If not released from radiological control, wash and rinse water will be managed as mixed waste and transported off-site to an appropriately permitted waste management facility.

- g. A representative sample of the rinseate from step (d) will be analyzed as specified in Condition II.G.1.e.2.c. Analytical results will be used to determine whether the containment surface meets the closure decontamination standard as specified in Condition II.G.1.e.2.g. If the rinseate does not demonstrate the closure decontamination standard, the containment rinsing procedure above will be repeated until the decontamination standard is met. Alternatively, the containment may be disposed of in accordance with procedures specified in Condition II.G.1.e.2.h.
- h. After decontamination procedures of step (g) have been completed, any previously identified cracks or gaps will be further investigated. The concrete will be chipped to the bottom of the crack and for three inches on either side of the crack. If the crack breaches the concrete, samples will be obtained from the underlying soil beneath the crack. Samples of the underlying soil must also be obtained, if the containment surface has not demonstrated the closure decontamination standard. The soil will be sampled and analyzed as specified in Condition II.G.1.e.2.c. Analytical results will be used to determine whether the soil meets the closure decontamination standard as specified in Condition II.G.1.e.2.g.
- i. Should soil samples not meet the closure decontamination standard, additional sampling and analysis, followed by fill removal, will be undertaken until all contaminated fill is identified and removed. Procedures for soil sampling and removal will be as specified in Condition II.G.1.e.2.f.

II.G.1.e.2.b. Equipment Decontamination

The equipment used in closing each permitted unit, including shovels, sampling tools, and buckets, will be decontaminated as follows:

- a. Where applicable, physically remove the material from the sampling equipment by using metal or nylon brushes, or high-pressure water.
- b. Wash the equipment with a non-phosphorus detergent solution.
- c. Rinse with tap water.
- d. Rinse with distilled/deionized water.
- e. Rinse with 10% nitric acid if the hazardous constituents to be analyzed include trace metals.
- f. Rinse with distilled/deionized water.
- g. Rinse with pesticide grade solvent (acetone or hexane) if the sample will be

analyzed for trace organics.

- h. Rinse with distilled/deionized water.
- i. Air-dry the equipment completely.
- j. In addition to the above, the closure plan provides information that addresses the following items:
- k. A designated decontamination area will be established prior to soil sampling. This area will be lined with an impervious plastic layer. Decontamination liquids must not be allowed to accumulate on this liner. At the end of the sampling event, the area will be cleaned.
- l. The decontamination wastewater generated will be stored in clean containers in a designated area onsite. The decontamination wastewater will be managed and tested in accordance with regulations and properly disposed.
- m. Except for the disposable items, all reusable sampling equipment will be decontaminated prior to use in the field, between each sample, and upon completion of all sampling activities at the end of sampling each day.
- n. Equipment will be washed in containers or on an impervious surface, which allows for the collection of all rinsate in tanks or containers. All rinsate will be collected and managed as hazardous waste. Alternatively, the rinsate may be sampled, analyzed, and disposed in accordance with the requirements for containment rinsate as specified in Conditions II.G.1.e.2.a and b.
- o. Prior to leaving any site locations undergoing decontamination, contaminated PPE, clothing, or any expendable items used to decontaminate the permitted units (e.g., mops, brooms, gloves, coverall, and boots) will be containerized and properly disposed of as hazardous waste. Such expendable items (which have only been in contact with wash solutions and/or rinsate which subsequent analyses have shown do not display a hazardous characteristic or do not contain any listed hazardous constituents) may be re-used or disposed of as non-hazardous waste.
- p. Excavation vehicles used to remove contaminated soil will be decontaminated by scraping and/or brushing solids from the blades and tires, which touched the contaminated soil. The scraping will be properly disposed of as hazardous waste. Vehicles will then be washed and rinsed using the decontamination procedures for secondary containment. Vehicles will be washed on an impervious surface, which allows for the collection of all rinseate in container or tanks.

All rinse water generated during decontamination of vehicles will be collected and managed as hazardous waste. Alternatively, the rinsate may be sampled, analyzed, and disposed of in accordance with the requirements for containment rinsate as specified in Conditions II.G.1.e.2.a and b.

II.G.1.e.2.c. Sampling and Analysis

II.G.1.e.2.c.1. Sample Collection

The sampling plan for the permitted unit must be sufficient to meet the unit specific closure requirements of the VHWMR and the RCRA regulations 40 CFR § Part 264 Subpart G, I through X and Subpart DD. The sampling plan will also follow the guidance provided in the DEQ 2001 Draft Guidance for Closure Plans and Post Closure Plans for Hazardous Waste Management Facilities (DEQ Draft Closure Guidance).

The sampling plan will demonstrate closure of each permitted unit in compliance with the closure plan's decontamination standards and performance standards and with the unit specific closure requirements of regulations. The number and types of samples that are needed to establish closure of the facility's permitted unit in accordance with the regulations will depend upon the unit specific closure requirements and consideration of the numerous factors listed in Section 3.11, Closure Sampling and Analyses Plan, of the DEQ Draft Closure Guidance.

The types of medium that may be sampled to demonstrate closure of permitted unit may include, but are not limited to the following:

- a. Rinsate sampling
- b. Soil and fill sampling
- c. Sampling asphalt and concrete
- d. Solid and hazardous wastes
- e. Background sampling

Rinsate Sampling

Verification of the decontamination of permitted unit structures and equipment typically involves the collecting of final rinsate water samples from the structure and collecting separate final rinsate samples from each individual piece of equipment (each tank, pump, piping, ancillary equipment, etc.) of the permitted unit. The final rinsate samples are to utilize analyte-free (deionized) water.

The final rinsate samples are taken after all of the hazardous wastes have been removed from the unit structure and the individual equipment, and after the permitted unit and equipment have been (cleaned, pressure washed, steam cleaned, rinsed, etc.) in accordance with the decontamination procedures specified in the closure plan. The final rinsate of each permitted unit structure and each piece of equipment are to be individually analyzed and tested for the hazardous chemicals of concern (HCOCs) to determine whether the permitted unit's structure and individual equipment meets the decontamination standards. Wash waters and rinse waters from the permitted unit and equipment may be combined in common containers and tested to establish the proper method of disposal. All waste, wash waters, rinse waters generated during closure need to be sampled and tested for HCOCs and for Toxicity Characteristics Leaching Potential (TCLP) parameters to characterize the waste for disposal in accordance with DEQ regulations.

Soil and Fill Sampling

If cracks or gaps in the containment surface have been identified, at least one soil or fill sample will be obtained from beneath each crack or gap. Additional samples will be taken every 10 linear feet from beneath any such features greater than 10 feet in length. A sampling grid with 10-foot intervals will be established over the location of the containment, and each node will be numbered. A minimum of eight sampling locations will be chosen using a random numbers generator or table. Samples of the soil will be taken at these locations. Samples will be taken at the surface and at depths of 0-6 inches, 6-12 inches, 12-18 inches, and 18-24 inches below the surface at all locations.

At each sampling point the concrete slab will be core-drilled, and a soil or fill sample will be removed, taking care to avoid mixing of the soil. Soil samples will be obtained from the surface, 0-6 inches, 6-12 inches, 12-18 inches, and 18-24 inches below the base of the overlying slab. The soil probe will be cleaned between sampling to avoid cross-contamination. Cleaning will be performed following decontamination procedures in Condition II.G.1.e.2.b.

Should soil contamination be detected beneath a permitted unit that exceeds the closure plan "clean closure" decontamination standards, then the horizontal extent of potential contamination outside the permitted unit boundary will be evaluated by systematic soil sampling. The initial soil-sampling scheme of the closure plan will be laterally extended beyond the initial sampling design by sampling in incremental two foot distances in each direction of the original permitted unit sample grid until soil contamination is either, not detected or is shown to comply with the closure plan decontamination standards and performance standards. A perimeter will be established at a two foot distance from the outside of the originally designated permitted unit. Eight randomly selected sample locations will be located along the perimeter. These samples will be comprised of two

samples per side. Sampling protocol (including sample depths and analyses) will follow procedures established for the initial soil sampling design of the permitted unit.

Sampling Asphalt and Concrete underlying the Hazardous Waste Storage Unit

A sampling grid with 10- foot intervals will be established over the location of the asphalt pad, and each node will be numbered. A minimum of eight sampling locations will be chosen using a random numbers generator or table. Samples of the asphalt and the soils beneath the asphalt will be taken at these locations. If the overlying structure of permitted unit is still in place, samples will be taken by drilling through all overlying materials. Samples of the asphalt and concrete will be taken. Samples of the soil beneath the asphalt and concrete will be taken at the surface and at a depth of 0-6 inches, 6-12 inches, 12-18 inches, and 18-24 inches below the surface at all locations.

Solid and Hazardous Wastes

Inventories of solid and hazardous wastes in each permitted unit that are subject to closure must be properly characterized in accordance with in testing requirements of the RCRA prior to shipment to a permitted transfer, storage, and disposal facility.

Background Samples

Background samples will be collected in a manner identical to that of the closure samples from the analogous matrix, including all sampling quality control procedures. The location of all background sampling will be approved by DEQ prior to sampling.

- a. Background water samples will be taken from the potable water supply, which is used as the source of wash water and rinsate water in the decontamination of the permitted units. NNSY potable water will be collected from the cold water tap after running the tap fully open for a minimum period of five minutes, if the potable water source is to be used for decontamination. Background final rinsate samples may also be taken from a background structure which is of similar construction materials to the permitted units, and if the background structure has not been impacted by the permitted unit's storage operations and HCOCs managed at the facility site. The final rinsate samples from a background structure will be taken after decontamination by washing and rinsing in the same manner as the permitted units undergoing closure.
- b. Background soil samples will be obtained from an area unaffected by hazardous waste management activities and from a soil of similar geology and

soil type as the permitted unit subsoil. At a minimum eight background soil samples will be collected from within the first six inches of subsoil below the surface.

II.G.1.e.2.d. Analytical Constituents and Methods

All rinsate and soil samples, including background samples, taken pursuant to this Closure Plan for the HWSU will be analyzed for all hazardous constituents specified in Table II.G-3. All rinsate and soil samples, including background samples, taken pursuant to this Closure Plan for the MWSU will be analyzed for all hazardous constituents specified in Table II.G-4. Samples will be analyzed for all constituents by the analytical methods specified, and analyses will meet the specified quantification limits. All methods are from the U.S. Environmental Protection Agency (USEPA) document SW-846 Test Methods for Evaluating Solid Waste, Third Edition, 1986, as updated.

NNSY will use the most reliable SW-846 analytical method that can achieve a method detection limit (MDL) and/or practical quantitation limit (PQL) below the DEQ approved screening criteria or as approved by the DEQ. Prior to closure of the HWSU and/or MWSU, NNSY will submit for DEQ approval, a proposed screening criteria, for all hazardous constituents specified in Table II.G-3 and II.G-4.

II.G.1.e.2.e. Quality Assurance and Quality Control

Sampling and analytical quality assurance and quality control will, at a minimum, be consistent with all applicable requirements of Chapter One of SW-846, as updated. The procedures presented in that document will be followed to assure the analytical results will be accurate and representative. All rinsate and soil samples, including background samples, taken pursuant to this Closure Plan for the HWSU and MWSU, will be analyzed for all hazardous constituents specified in Tables II.G-3 and II.G-4 and for TCLP parameters, in order to characterize the waste for proper disposal.

In addition to the procedures of Chapter One of SW-846, in order to evaluate the acceptability of the field sampling program, at least one duplicate sample, one equipment blank and one trip blank will be prepared each day sampling occurs. The duplicate sample will be prepared by splitting a sufficient quantity of soil from one of the sample locations into two equal parts. Each part will be placed in appropriate sample containers. An equipment blank will be prepared by pouring organic-free deionized water through the decontaminated sampling device. The water will be collected in appropriate sample containers. The trip blank will be a quantity of organic-free deionized water shipped to the site with the empty sample containers and returned to the laboratory with the samples. The duplicate sample and the blanks will be analyzed for all constituents analyzed pursuant to

Condition II.G.1.e.2.d.

II.G.1.e.2.f. Additional Sampling and Removal Protocol

Should any soil or fill sample exceed the closure decontamination standard for any constituent, the contaminated soil or fill will be removed. The overlying concrete and/or asphalt, in the vicinity of soil sampling location, will first be removed, and soil will be excavated to a depth at which the decontamination standard is achieved. If samples from the same location at a greater depth achieve the decontamination standard, soil will be excavated to that depth.

If the 24- inch-depth sample does not achieve the decontamination standard, soil sampling and analysis will continue at 6 inch intervals until the decontamination standard is met. Such soil samples need only be analyzed for those constituents in the upper level samples which did not meet the decontamination standard. Soil will then be excavated to the depth at which the decontamination standard is met.

For soil samples taken under cracks or gaps in the containment, the extent of the soil excavation will consist of the linear extent of the crack from the sample that did not achieve the decontamination standard and from another sample under the same crack that successfully achieved the decontamination standard. Soil will also be excavated for five feet on each side of the linear extent of the crack.

For random soil samples taken from under the pre-existing asphalt containment under the permitted unit, the extent of the soil excavation will be to the boundary of the permitted unit or from another sample taken under the same crack that successfully achieved the decontamination standard.

II.G.1.e.2.g. Decontamination Standards

All hazardous waste residues shall be removed or decontaminated. Achievement of this closure standard may be demonstrated in several ways.

II.G.1.e.2.g.1. Analytical Non-Detection

If analysis of a rinsate sample from containment area or piece of equipment should result in analytical non-detection of all constituents analyzed pursuant to Condition II.G.1.e.2.d, the item will have met the closure decontamination standard.

Should analysis of all depth of a soil sample result in analytical non-detection of all constituents analyzed pursuant to Condition II.G.1.e.2.d, the sampling location will be deemed to be uncontaminated. Should all soil samples be uncontaminated in this fashion, the soil will have met the closure decontamination standard. Should some soil samples demonstrate contamination, further soil sampling and

removal will be conducted pursuant to Condition II.G.1.e.2.f of this Closure Plan.

II.G.1.e.2.g.2. Comparison to Background Levels

Alternatively, attainment of the closure decontamination standard may be demonstrated through the use of a statistical comparison of hazardous constituent concentrations in rinsate or soil samples to those of uncontaminated background samples. Background samples will be obtained pursuant to procedures specified in Condition II.G.1.e.2.c.

A closure statistical comparison will be employed to determine if adequate decontamination for any of the following activities has been achieved:

Decontamination of a hazardous waste management unit

Removal of contaminated soil underneath a hazardous waste management unit
Background samples and compliance samples will be collected for the statistical comparison. Background samples refer to samples taken from either pre-rinse decontamination liquid or concrete/soil at approved locations, which are not expected to be impacted by the facility's historical activities. Compliance samples are those collected from either post-rinse liquid or concrete/soil from the closure unit.

The statistical comparison will satisfy the following performance standards:
The significance level will be no less than 5% throughout the statistical evaluation;

Determination of the minimum number of samples, treatment of outliers, and treatment of non-detected values will follow the Interim Guidance Document on the Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, EPA, April 1989; and Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Draft Addendum to the Interim Guidance, EPA, June 1992.

The sampling results satisfy the assumptions associated with the selected statistical method(s) including the minimum number of background/compliance samples and the distribution of data points.

If a comparison of soils at different depths (or soil types) is required, the sampling design will ensure that adequate background and compliance samples are taken at each depth (or soil type).

NNSY shall propose a statistical method(s) to be used for the evaluation of closure decontamination and shall demonstrate the applicability of the selected method(s) to DEQ. If the statistical comparison indicates that there is no significant difference between the background and the compliance sampling

results, the compliance sampling results are deemed to pass the background statistical comparison, and the decontamination is deemed to be adequate.

Below are some suggested statistical methods for use in closure demonstration:

Tolerance interval - The tolerance interval is designed to contain $(1-\beta)\%$ of the sample population with $(1-\alpha)\%$ confidence. A minimum of 19 background samples should be collected when using this test to ensure the test has adequate power to detect an impact from the facility. At least one data point from each sampling grid in the compliance area should be compared to the upper tolerance limit calculated for the background dataset. Parametric and non-parametric analyses can be performed using the tolerance interval. Assumptions of normality should be checked prior to performing a parametric analysis. If 50% or more of the background data are non-detects, the non-parametric tolerance limit should be used for analysis. The advantage of the tolerance limit is it can detect “hot spots” in the compliance area and will minimize the need for additional sampling after analysis. The disadvantage is the number of background samples required to calculate the tolerance limit with a minimal false positive rate and the number of compliance samples (one from each sampling grid) needed.

CABF T-test - The CABF T-test is a parametric test used to compare the mean of the background data to the mean of the compliance data. The assumptions of normality (or log-normality) and equal variances should be applied prior to performing the t-test. If the data are not normally (or log-normally) distributed or the assumption of equal variances is not met, a non-parametric test should be performed. If 50% or more of the either the background or compliance data are non-detects, a non-parametric test should be performed. A minimum of four background samples and four compliance samples are needed to perform this test. The advantage of the CABF T-test is the few number of samples needed to perform the test. The disadvantage is that the test assumes uniform contamination exists at the site. If there is evidence of “hot spots” at the site, the facility may be asked to take more samples and possibly use a tolerance interval for analysis. The sampling plan, established prior to the initial sampling, should include locations of additional random samples in case they are needed.

Wilcoxon Rank Sum Test - The Wilcoxon rank sum test is a non-parametric test used for comparison of the median of the background data to the median of the compliance data. The test assumes the distributions of the two datasets are the same. A minimum of five background samples and five compliance samples are needed to perform this test. The advantage of the Wilcoxon test is the few number of samples needed to perform the test. The disadvantage is that the test assumes uniform contamination exists at the site. If there is evidence of “hot spots” at the site, the facility may be asked to take more samples and possibly use a tolerance interval for analysis. The sampling plan, established prior to the initial sampling, should include locations of additional random samples in case they are needed. Minimum samples needed to perform the above tests are detailed in Table II.G-5.

II.G.1.e.2.g.3. Closure Risk Assessment

Clean closure of the hazardous and mixed waste management units may be demonstrated by a risk-based assessment as an alternative to the non-detection decontamination standard or the statistical comparison of compliance samples to background levels. NNSY may propose to demonstrate that the concentrations of hazardous constituents detected and remaining in the unit's equipment, structures, and subsoils do not pose an unacceptable level of risk to human health and the environment.

If a risk assessment is conducted to determine the site-specific decontamination standards, the risk assessment criteria shall comply with the DEQ Draft Closure Guidance detailed in Appendix II.G-1, Appendix A, Enclosure (4) and the Virginia Unified Risk Assessment Model (VURAM) User Guide (as updated).

II.G.1.e.2.h. Alternative to Decontamination of Waste Management Structures and Equipment

As an alternative to further decontamination procedures, at any time in the closure procedures NNSY may elect to demolish any or all portions of the permitted units. If these materials are released from radiological control they may then be managed as hazardous waste and transported off-site for disposal at a permitted hazardous waste facility. Should this alternative be selected for containment area, any sampling and analysis of underlying soils which is prescribed by this plan will still be carried out.

II.G.1.f. Duties of the Professional Engineer

An independent Virginia registered professional engineer (P.E.) will observe closure activities at the storage units throughout the closure time-period. The engineer will visit the site at least weekly during closure and will specifically view the following activities:

- i. Final inventory elimination
- ii. Equipment decontamination
- iii. Containment crack determination
- iv. Containment decontamination
- v. Rinsate sampling procedures
- vi. Soil sampling procedures

Prior to signing the certification that the facility has been closed in accordance with this Closure Plan, the P.E. will also review all analytical data and laboratory reports and all calculations which demonstrate that closure decontamination standards have been achieved. Such review will address demonstrations that appropriate Quality Assurance and Quality Control procedures, as described in Condition II.G.1.e.2.e, have been observed and the appropriate equations have been applied and correctly calculated.

II.G.1.g. Certification of Closure

The VHWMR and the RCRA regulations, under 40 CFR § Part 264, §264.115, Certification of Closure, requires that NNSY must submit to the Director, by registered mail, a certification that storage units have been closed in accordance with the specifications in the approved closure plan. The certification must be signed by the owner or operator and by an independent professional engineer registered in the Commonwealth of Virginia. The certification must be submitted within 60 days of completion of closure of each permitted unit and 60 days of the completion of final closure of the facility.

The closure plan should specify that closure certification and the closure report will be in accordance with the following certification requirements, which are delineated in the VHWMR and the RCRA:

The owner/operator and a P.E., registered in the Commonwealth of Virginia, will both certify that the storage unit has been closed in accordance with the specifications in the approved closure plan. The certification statements will be in accordance with the 40 CFR §270.11, Signatories to Permit Applications and Reports. The certifications will be by an authorized person described in 40 CFR §270.11(a) or by a duly authorized representative of that person as delineated in 40 CFR §270.11(c).

The certification of closure by the owner/operator and the P.E. will be in accordance with the requirements of the VHWMR, under 40 CFR §270.11(d) and will be signed, dated, include the title of the person certifying the closure, and include the certification text that is specified within the regulations as: "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

The certification of closure will be submitted by registered mail to DEQ within 60

days of completion of closure within the Closure Report.

Prior to signing the closure certification statement, the engineer will review all procedures, systems, analytical data, laboratory reports, QA/QC Plan, QA/QC procedures, QA/QC data, calculations, statistical analysis, and risk-based assessment evaluations, criteria, and conclusions. The P.E.'s review, will also include a determination that appropriate closure plan procedures, systems, including QA/QC procedures, have been followed and observed in the closure activities at the site and by the contracted laboratory, and that the appropriate equations have been correctly applied and calculated as specified in the closure plan and appropriate guidance documents of the USEPA and DEQ. In addition, prior to certification of closure, the P.E.'s review will verify that the decontamination standards of the closure plan have been achieved, and that the facility has been closed in accordance with the closure performance standards of the approved closure plan.

II.G.1.h. Closure Report

NNSY will document the P.E.'s certification of closure by submitting a closure report to the DEQ Director. The closure report will demonstrate that the closure of the storage units have been achieved in accordance with the procedures, systems, criteria, decontamination standards, and performance standards of the approved closure plan. The closure report will include the certification of closure statements from the owner/operator and the independent P.E., registered in the Commonwealth of Virginia.

Table II.G-1 Closure Schedule for Hazardous Waste Storage Unit Building 506 Norfolk Naval Shipyard

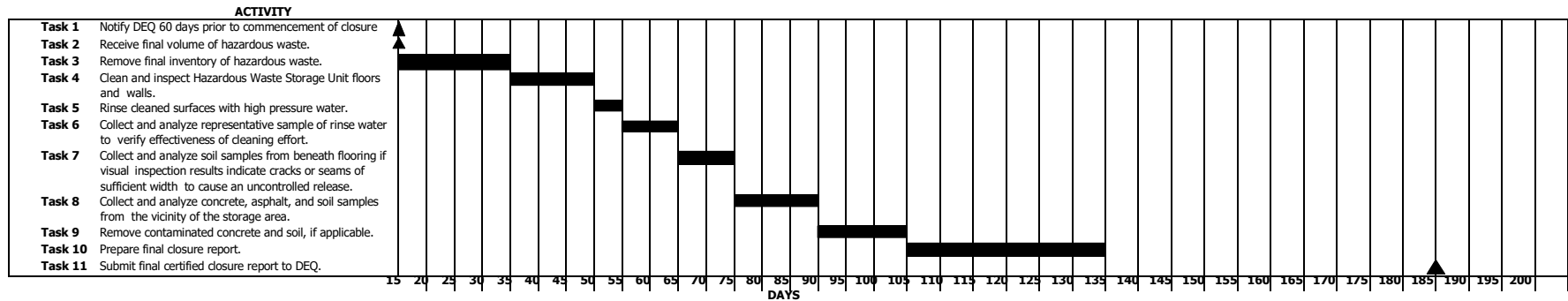


Table II.G-2 Closure Schedule for Mixed Waste Storage Unit Building 280 Norfolk Naval Shipyard

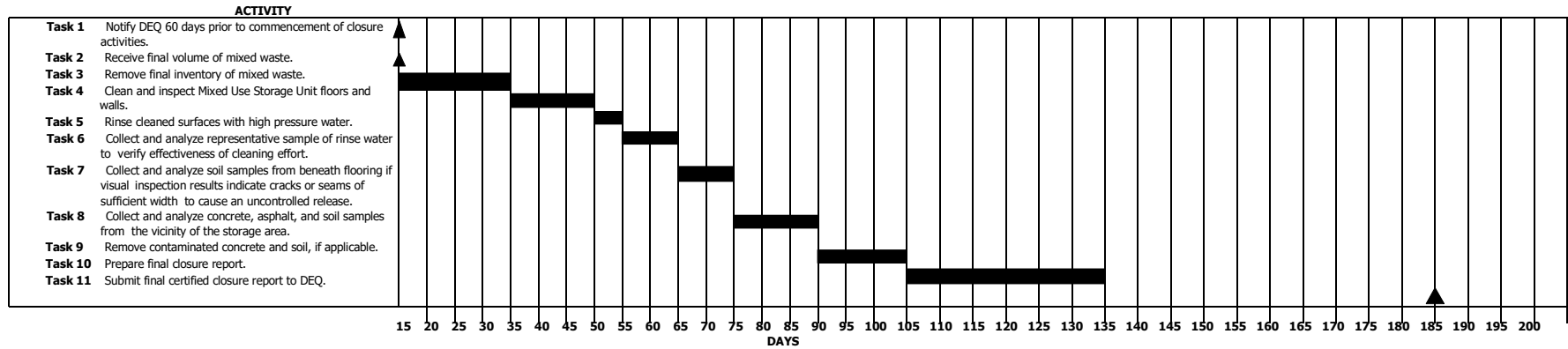


Table II.G-3 - Closure Analytical Constituents Hazardous Waste Storage Unit	
Constituent	
Acetone	Heptachlor epoxide
Acetophenone	Hexachlorobenzene
Acetonitrile; Methyl cyanide	Hexachlorobutadiene
Acrylonitrile	Hexachloroethane
Aniline	Isobutyl alcohol; Isobutanol
Arsenic	Isopropyl benzene
Barium	Lead
Benzene	Mercury
BHC; Lindane	Methoxychlor
Butyl benzyl phthalate; Benzyl butyl phthalate	1-Methoxy -2-propanol acetate
Cadmium	Methyl chloride
Carbon disulfide	Methylene chloride
Carbon tetrachloride	Methyl Ethyl Ketone; 2-Butanone; MEK
Chlordane	Methyl ethyl ketone peroxide
Chlorobenzene	4-Methyl-2-pentanone; Methyl isobutyl ketone;
p-Chloro-m-cresol; 4-Chloro-3-methylphenol	1,4-Naphthoquinone
Chloroform; Trichloromethane	Nickel
2-Chlorophenol	Nitrobenzene
Chromium	2-Nitropropane
Copper	Pentachlorophenol
m-Cresol; 2-Methylphenol	Phenol
o-Cresol; 3-Methylphenol	Polychlorinated dibenzo-p-dioxins; PCDDs
p-Cresol; 4-Methylphenol	Polychlorinated dibenzofurans; PCDFs
Cyanide	Pyridine
2,4-D; 2,4-dichlorophenoxy acetic acid	Selenium
Di-n-butyl phthalate	Silver

Table II.G-3 - Closure Analytical Constituents Hazardous Waste Storage Unit	
Constituent	
o-Dichlorobenzene; 1,2-Dichlorobenzene	Silvex; 2,4,5-TP
m- Dichlorobenzene; 1,3-Dichlorobenzene	Styrene
p-Dichlorobenzene; 1,4-Dichlorobenzene	Sulfide
Dichlorodifluoromethane	2,3,7,8-Tetrachlorodibenzo- p-dioxin; 2,3,7,8-TCDD
1,2-Dichloroethane; Ethylene dichloride	Tetrachloroethene
1,1-Dichloroethylene; Vinilydene chloride	2,3,4,6-Tetrachlorophenol
2,4-Dichlorophenol	Tetrahydrofuran
2,6-Dichlorophenol	Toluene
Diethylene glycol monobutyl ether	Toxaphene
Dimethyl phthalate	1,1,1-Trichloroethane
2,4-Dinitrotoluene	1,1,2-Trichloroethane
Di-n-octyl phthalate	Trichloroethene
1,4-Dioxane	Trichlorofluoromethane
Dipropylene glycol	2,4,5-Trichlorophenol
Dipropylene glycol monoethyl ether	2,4,6-Trichlorophenol
Endrin	Triethylenediamine
Ethylbenzene	Trimethylbenzoate
Ethylene glycol monobutyl ether; 2-butoxyethanol	Vanadium
Ethylene glycol monoethyl ether; 2-ethoxyethanol	Vinyl chloride
Formaldehyde; Ethylene oxide	Xylene (total)
Heptachlor	Zinc

Table II.G-3 - Closure Analytical Constituents Hazardous Waste Storage Unit

Constituent

Notes:

NNSY will use the most reliable SW-846 analytical method that can achieve a method detection limit (MDL) and/or practical quantitation limit (PQL) below the DEQ approved screening criteria or as approved by the DEQ. Prior to closure of the HWSU, NNSY will submit for DEQ approval, a proposed screening criteria, for all hazardous constituents specified in Table II.G-3 and II.G-4.

Table II.G–4 Closure Analytical Constituents Mixed Waste Storage Unit	
Constituent	
Arsenic	
Barium	
Benzene	
Cadmium	
Carbon disulfide	
Carbon tetrachloride	
Chlorobenzene	
Chromium	
Copper	
Cyanide	
o–Dichlorobenzene; 1,2–Dichlorobenzene	
Dichlorodifluoromethane	
Endrin	
Ethylene glycol monoethyl ether; 2–ethoxyethanol	
Hexachlorobenzene	
Hexachlorobutadiene	
Hexachloroethane	
Isobutyl alcohol; Isobutanol	
Lead	
Mercury	
Methylene chloride; Dichloromethane	
Methyl Ethyl Ketone; 2–Butanone; MEK	
Nickel	
2–Nitropropane	
Pyridine	
Selenium	
Silver	
Tetrachloroethylene; Tetrachloroethene; Perchloroethylene; PCE	
Toluene	
1,1,1–Trichloroethane; Methyl chloroform	
1,1,2–Trichloroethane	
Trichloroethylene; Trichloroethene	

Table II.G–4 Closure Analytical Constituents Mixed Waste Storage Unit	
Constituent	
Trichlorofluoromethane	
Vanadium	
Zinc	
Notes: NNSY will use the most reliable SW-846 analytical method that can achieve a method detection limit (MDL) and/or practical quantitation limit (PQL) below the DEQ approved screening criteria or as approved by the DEQ. Prior to closure of the MWSU, NNSY will submit for DEQ approval, a proposed screening criteria, for all hazardous constituents specified in Table II.G-3 and II.G-4.	

Table II.G-5 Suggested Minimum Samples*			
	Parametric	Non-Parametric	Non-Parametric Interval % Confidence
CABF T-test	4	NA	NA
Wilcoxon Rank Sum	NA	5	NA
Confidence Interval	4	NA	NA
Tolerance Interval	8	19	95%
* The above tests can be used with fewer samples, however it will increase the false positive rate. NA – Not Applicable.			

MODULE III - STORAGE IN CONTAINERS - HAZARDOUS WASTE STORAGE BUILDING 506 AND MIXED WASTE STORAGE BUILDING 280

III.A. PERMITTED HAZARDOUS WASTE STORAGE

The Permittee is subject to the terms and conditions of this Permit, and may store in containers only hazardous wastes, which are specified in Permit Condition(s) III.A.1 and III.A.2.

III.A.1. Hazardous Waste Storage Unit

The Hazardous Waste Storage Unit (permitted unit) located in building 506, is designed specifically for storage of hazardous waste and remains unoccupied except for those times when personnel are actively involved with managing the wastes. Hazardous waste management in this unit shall be in accordance with the following:

- a. Hazardous waste may be stored and managed in containers in isolated bays with compatibility restrictions and includes all labeling requirements as described in Permit Attachment II.E;
- b. The floor plan of the Hazardous Waste Storage Unit (HWSU) is depicted in Figure II.E-1 and described in Permit Attachment II.E; and
- c. The pallet arrangement for each bay for the permitted unit is depicted in Figure II.E-2 and described in Permit Attachment II.E.

III.A.2. Mixed Waste Storage Unit

The Mixed Waste Storage Unit (permitted unit) located in in the southwest corner of Building 280, is designed specifically for storage of mixed waste. A portion of the building that is used for storage of Radioactive (RAD) waste that contains regulated levels of Polychlorinated Biphenyls (PCB), and has a segregated containment, which is not a part of the permitted Mixed Waste Storage Unit (MWSU). Mixed waste management in this unit shall be in accordance with the following:

- a. Mixed waste may be stored and managed in secondary containers and includes all labeling requirements as described in Permit Attachment II.E;
- b. The floor plan of the MWSU and the PCB/RAD waste storage area are depicted in Permit Attachment II.E, Figure II.E-3; and
- c. A typical pallet arrangement for the permitted unit is depicted in Permit

Attachment II.E, Figure II.E-4.

III.B. WASTE IDENTIFICATION

Norfolk Naval Shipyard (NNSY) has two (2) permitted hazardous waste storage units identified in Permit Condition III.A. Waste profiles, characterization, determination, and management practices for each unit are discussed in Permit Attachment(s) II.B and II.E.

III.B.1. Generation

- a. HWSU stores hazardous wastes generated on contiguous NNSY property and does not include waste from off-site generators. The operations that generate hazardous waste include; abrasive blasting, cleaning compounds, electroplating, lab waste, lubrication of equipment, photographic chemicals, painting, paint related material, and spill debris.
- b. MWSU stores mixed wastes generated on contiguous NNSY property and includes waste from off-site. The operations that generate mixed waste on-site and off-site include but not limited to ship force laboratory solid and liquid waste, paint removal waste, reactor system maintenance waste, and spill debris. A list of off-site generating facilities is specified in permit Attachment II.A.

III.B.2. Storage Capacity of Storage Units

- a. HWSU with an area of 10,824 square feet has a permitted storage capacity of 86,240 gallons based on storage in seven bays and the aisle spacing limitations and stacking requirements for each bay.
 - i. Each bay in the HWSU measures 30 feet wide and 35 feet deep and has a design capacity of 12,320 gallons.
 - ii. The containment capacity in each bay exceeds both the volume of the single largest container (1,000 gallons) and 10 % of the total volume of the maximum contents of the bay (1,232 gallons.)
 - iii. Hazardous waste may be stored in bulk (container capacity not to exceed 1,000 gallons) in the permitted unit not to exceed the maximum storage capacity of the unit.
 - iv. Secondary containment for the HWSU is described in Permit Condition III.G and Permit Attachment II.E.
- b. MWSU with an area of 4,020 square feet has a permitted storage capacity of

29,480 gallons.

- i. The containment capacity exceeds both the volume of the single largest container and 10% of the total volume of the maximum contents of the unit.
- ii. Mixed waste may be stored in bulk (container capacity not to exceed 1,000 gallons) in the permitted unit not to exceed the maximum storage capacity of the unit.
- iii. Secondary containment for the MWSU is described in Permit Condition III.G and Permit Attachment II.E.

III.C. CONDITION OF CONTAINERS

Pursuant to 40 CFR § 264.171, if a container holding hazardous waste found to be in poor condition (e.g., exhibits excessive rusting, structural defects, or any other condition that could lead to container rupture or leakage) the Permittee shall transfer the waste into a container in good condition.

III.D. COMPATIBILITY OF WASTE IN CONTAINERS

Pursuant to 40 CFR § 264.172, the Permittee ensure that all containers used for hazardous waste management are made of or lined with materials which will not react with, and are not otherwise incompatible with the waste to be stored.

III.E. MANAGEMENT OF CONTAINERS

Pursuant to 40 CFR § 264.173, the Permittee shall ensure containers holding hazardous waste are always kept closed during storage, except when adding or removing waste, and are not opened, handled, or stored in a manner that may cause them to rupture or leak. A damaged container shall be managed as a hazardous waste unless it can be considered empty pursuant to 40 CFR § 261.7.

III.E.1. Container Labeling Requirements

- a. Pursuant to 40 CFR § 262.17(a)(5), the Permittee shall ensure that all containers of hazardous waste are labeled with the words "Hazardous Waste", an indication of the hazards of the contents, all applicable hazardous waste codes and marked with the date upon which each period of accumulation begins.
- b. The Permittee shall also ensure that all labels are not obscured or otherwise unreadable and that containers are always oriented so as to allow inspection of the labels.

- c. If the container is considered empty as defined by 40 CFR § 261.7, the Hazardous Waste label(s) shall be removed.

III.F. CONTAINER AND STORAGE INSPECTION

Pursuant to 40 CFR § 264.174, the Permittee shall conduct inspections for the hazardous waste storage areas as described in Permit Attachment II.C.

III.G. CONTAINMENT SYSTEM

The Permittee shall ensure that the container storage areas have a containment system that is designed and operated in accordance 40 CFR § 264.175(b) and as described in Permit Condition III.G.1 through III.G.3 and Permit Attachment II.E.

III.G.1. Requirement for the Base or Liner to Contain Liquids

The base for each permitted unit that contains free liquids must underlie the containers, and must be free of cracks, gaps, loss of integrity, deterioration, corrosion, or erosion of pads, berms, curbs, sumps, construction joints, and coatings of the containment area and be sufficiently impervious to contain leak, spills, and accumulated precipitation in accordance with 40 CFR § 264.175(b)(1.) The containment area shall be repaired in accordance with the protocols and frequencies for the two permitted units as described in Permit Attachment II.E.

III.G.2. Containment System Drainage

The base of the permitted storage units must be sloped or the containment system must be otherwise designed and operated to drain and remove liquids resulting from leaks spills, or precipitation, unless the containers are elevated or are otherwise protected from contact with accumulated liquids in accordance with 40 CFR § 264.175(b)(2.)

a. Hazardous Waste Storage Unit

- i. The permitted unit has a structure with an overhanging roof, open on all sides to the elements; thus, precipitation can collect in the storage bays.
- ii. Procedures for collecting rainwater shall be in accordance with the facility's operating record and Permit Attachment II.E.
- iii. The collected liquid is sampled and analyzed for characterization for treatment in the on-site industrial wastewater treatment facility or off-site in accordance with 40 CFR § 268, Land Disposal Restrictions (LDRs) as described in Permit Attachment II.B.

- iv. Liquids resulting from container leaks or spills are removed using absorbent material, mopping, and pumping as described in Permit Attachment II.F. Clean up materials are collected and managed as hazardous waste.

b. Mixed Waste Storage Unit

- i. The permitted unit is an enclosed building with coated containment curbs and floors that provide containment. The secondary containers are stored on pallets at all times except for loading or unloading.
- ii. Liquids resulting from container leaks or spills are removed using absorbent material or mopping and control the source as described in Permit Attachment II.F. Clean up materials are managed as mixed waste.

III.G.3. Containment System Capacity

Pursuant to 40 CFR § 264.175(b)(3), the containment system of each permitted unit must have sufficient capacity to contain 10% of the volume of the containers or the volume of the largest container, whichever is greater (Permit Attachment II.E.). Secondary containment capacity calculations are included in Figure III-1.

Hazardous Waste Storage Unit

The permitted unit secondary containment system is designed to contain spills within each bay and prevent commingling of wastes between bays. Each bay is sloped from the center aisle toward the back of the bay where liquids can accumulate for later cleanup. The finished floor elevation slopes a total of 8.5 inches over approximately 35 feet, for a slope of approximately 2 percent.

The floor of the permitted unit is a concrete slab on grade with a turned-up curb along the exterior walls at the back of the bays. Each bay is separated by a casting place curb starting at 2.5 inches near the center aisle and sloping to a maximum of 10 inches (a total fall of 8.5 inches) at the back of each bay. The floor and curbing is coated with an appropriate coating material. The exterior and bay walls are painted concrete block. Figure III-2 is a cross-sectional profile of the permitted unit.

Each bay at the permitted unit measures 30 feet wide and 35 feet deep. With the slope of the floor at 2 percent, the maximum secondary containment volume is 370 cubic feet or 2,780 gallons. Each bay has a design capacity of 14,080 gallons; the containment capacity in each bay exceeds both the volume of the single largest container (1,000 gallons) and 10 percent of the total volume of the maximum contents of the bay (1,408 gallons). Typically, containers are less than

119 gallons, but occasionally the facilities may receive a container up to 1,000 gallons (bulk containers). The center aisle of the permitted unit is 18 feet wide and includes an enclosed containment trench approximately 6 feet wide and varying in depth from 1- to 2-feet as it slopes from north to south to provide for removal of liquids. The containment trench is covered with steel grates. The floor on both sides of the containment trench is sloped toward the trench, thus isolating the trench from the storage bays. The trench is designed to contain 369 cubic feet or 2,760 gallons.

Mixed Waste Storage Unit

Each container of mixed waste is packaged in a primary container (drum or liquid container or bag for solids), then placed inside the storage container as secondary containment during storage operations. The secondary containment will be capable of containing the entire capacity of mixed waste stored in the primary container. The storage area is a concrete slab on grade with an appropriate coating material and no slope. The edges of the containment area are defined by concrete curbing not less than 7.5 inches high. The coated area is approximately 3,637 square feet with a total containment capacity of 2,444 cubic feet or 18,285 gallons. The containment capacity exceeds both the volume of the single largest container and 10 percent of the total volume of the maximum contents of the bay (2,948 gallons).

III.G.4. Control of Run-On

Pursuant to 40 CFR § 264.175(b)(4), run-on into the permitted unit containment system must be prevented, unless the collection system has sufficient excess capacity and in accordance with Permit Condition III.G.3. The permitted storage units' design prevents run-on as the finished floor elevations above the surrounding grade elevation.

III.G.5. Removal of Liquids from Containment System

Pursuant to 40 CFR § 264.175(b)(5), spilled or leaked waste and accumulated precipitation must be removed from the sump or collection area in as timely a manner as is necessary to prevent overflow of the collection system. Removal of liquids from the containment system for the permitted units is described in Permit Attachment II.E.

III.H. **SPECIAL REQUIREMENTS FOR IGNITABLE OR REACTIVE WASTE**

Pursuant to 40 CFR § 264.176, the Permittee shall ensure that containers holding ignitable or reactive waste are located at least 15 meters (50 feet) from the facility's property line and in accordance with 40 CFR § 264.17 (Permit Attachment II.A, Figure II.A-1.)

III.I. SPECIAL REQUIREMENTS FOR INCOMPATIBLE WASTE

The Permittee shall not place incompatible wastes in the same container, and shall not place hazardous waste in an unwashed container that previously held an incompatible waste or material in accordance with 40 CFR § 264.177.

- a. Containers of incompatible wastes shall be managed as described in Permit Attachment II.E.
- b. Waste, which is reactive with water, shall not be placed in the same bay or area with waste that may contain water.
- c. All equipment used for transfer of hazardous waste to or from containers (funnels, pumps, hoses, etc.) shall be compatible with the wastes, and shall be cleaned before it is used for the transfer of incompatible wastes.

III.J. CLOSURE OF CONTAINMENT SYSTEM

At closure, the Permittee shall remove all hazardous waste and residues from the containment system and the remaining containers, liners, bases, and soil containing or contaminated with hazardous waste or residues must be decontaminated or removed (40 CFR § 264.178.)

III.K. AIR EMISSION STANDARDS

The Permittee shall comply with the Air Emission Standards pursuant to 40 CFR Part 264, Subpart CC, Air Emission Standards for Tanks, Surface Impoundments, and Containers, to the extent applicable and as described in the Permit and Permit Attachment III.A.

III.K.1. Waste Determination Procedures

The Permittee shall determine the average volatile organic (VO) concentration at the point of origination for hazardous waste placed in a management unit exempted under the provisions of 40 CFR § 264.1082(c)(1) from using air emission controls specified in 40 CFR § 264.1084 through 40 CFR § 264.1087 as described in Permit Attachment II.E.

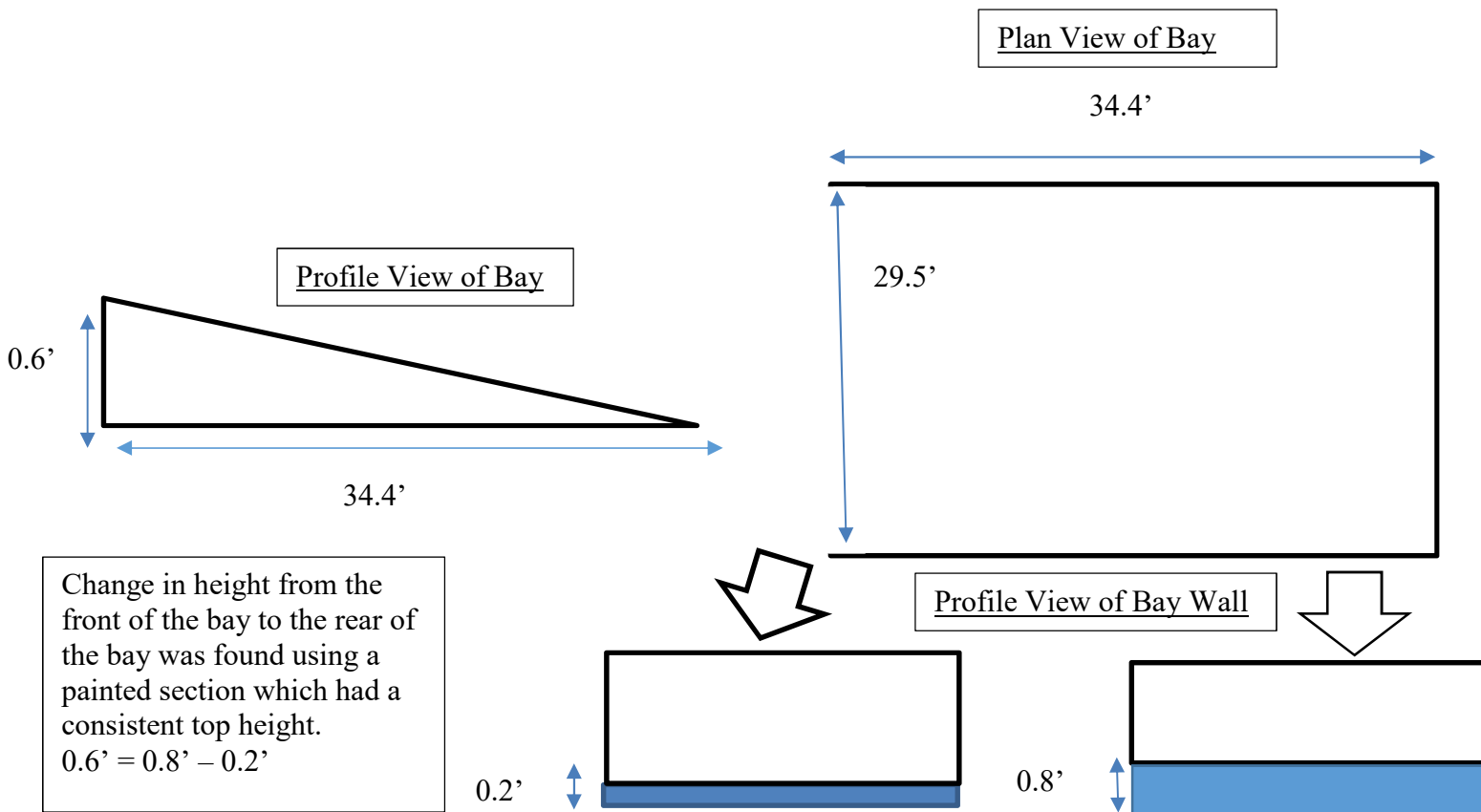
III.K.2. Standards Applicable to Containers

Standards applicable to containers of hazardous wastes are specified in 40 CFR § 264.1086. There are three levels of air emission controls for containers based on container size, organic contents, and whether the container, used in a waste stabilization process. Containers with a capacity less than 0.1 m³ (26 gallons) are

exempted from the rule, as are containers in satellite accumulation areas. NNSY's hazardous waste generation, storage, and container management procedures are subject to controlling air pollutant emissions from containers subject to 40 CFR § 264.1082(b), the permittee must maintain compliance with the Container Level 1 Standards specified in 40 CFR § 264.1086(c) and as described in Permit Attachment II.E.

Figure III-1: HWSU and MWSU Secondary Containment Calculations

HWSU



Volume of a bay = $0.5 * b * w * h = 0.5 * 34.4' * 29.5' * 0.6' = 304.4 \text{ ft}^3$
Gallons per $\text{ft}^3 = 7.47$
Volume of a bay = $304.4 \text{ ft}^3 * 7.47 (\text{gal}/\text{ft}^3) = 2274 \text{ Gallons}$
Number of bays = 8
Total volume of bays = $2274 \text{ Gallons} * 8 = \underline{\underline{18,192 \text{ Gallons}}}$

MWSU

STORAGE CAPACITY

The Mixed Waste Storage Unit is relegated into rows and columns of 4'x4' grids separated by no less than 3' aisle space. Each grid is capable of containing eight (8) 55-gallon drums full of waste. The standard layout allows fifty (50) grids to contain this volume of waste. Space within the unit allows for an expanded capacity of seventeen (17) additional grids.

STANDARD CAPACITY:

50 grids x 8 drums (55 gal) = 22,000 gallons

EXPANDED CAPACITY:

17 grids x 8 drums (55 gal) = 7,480 gallons

TOTAL CAPACITY:

67 grids x 8 drums (55 gal) = **29,480 gallons**

SPILL CAPACITY

TOTAL SPACE:

Curb: 7.5 inches (0.625 feet)

Area: 579,006 square inches (4,020.875 square feet)

Volume: 4,342,545 cubic inches (2,513 cubic feet)

Liquid Volume: 18,798 gallons

OBJECTS IN SPACE (VOLUME REDUCERS):

- **Door Berm:** 60,720 cubic inches
- **Six 24" Diameter Columns:** 20,321.28 cubic inches
- **Wedge Shaped Ramp:** 37,462.5 cubic inches

ADJUSTED VOLUME:

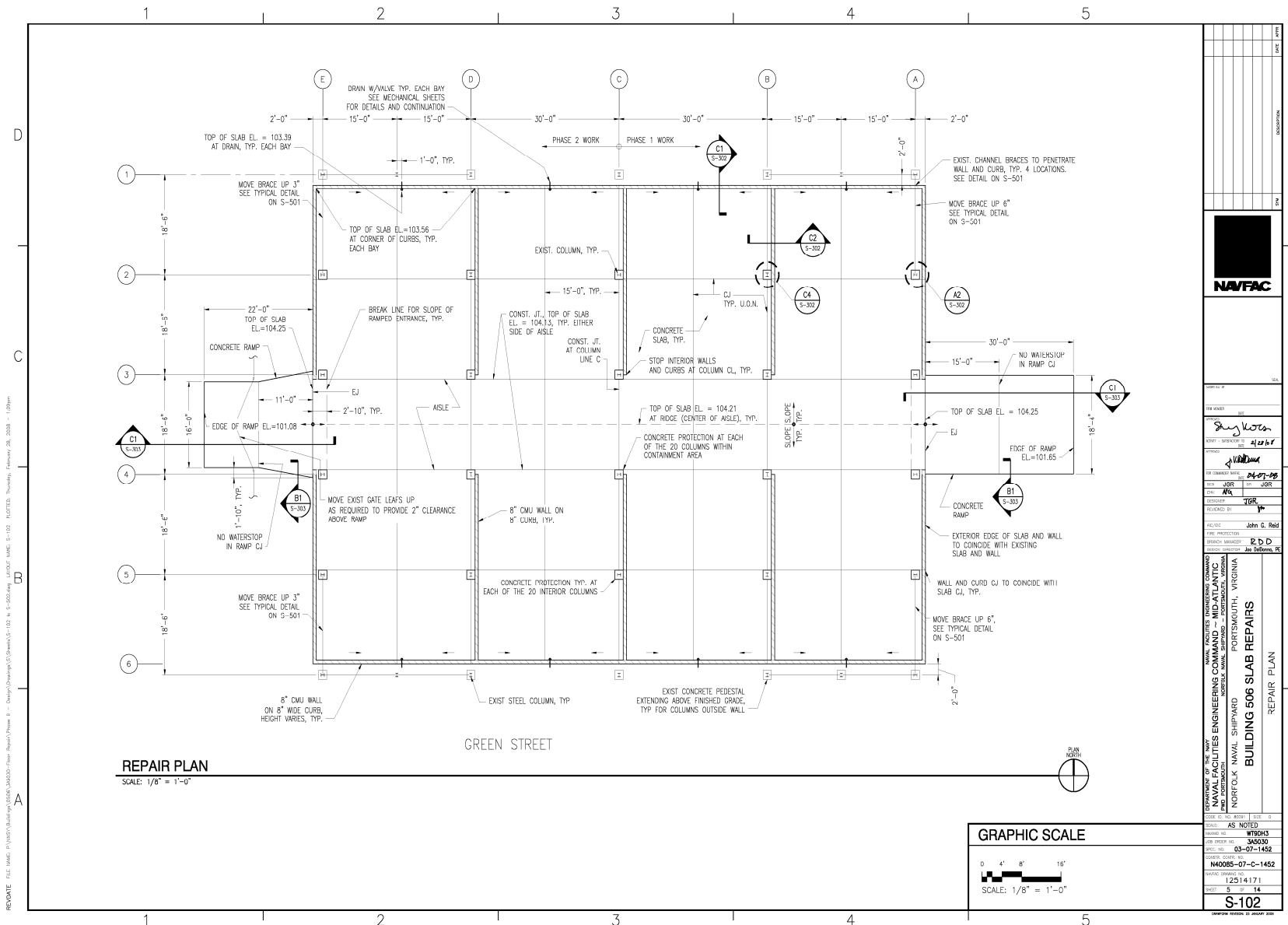
4,224,041 cubic inches

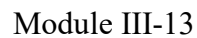
2444.5 cubic feet

18,285 gallons

[illegible]

EPA ID No. VA1170024813
Expiration Date: XX XX, 203X







ATTACHMENT III.A - AIR EMISSION STANDARDS FOR CONTAINERS

This section of the Permit has been prepared pursuant to 40 CFR Part 264 Subpart CC requirements

III.A.1. Applicability to Containers

This section is applicable to containers that are greater than 0.1 m³ (26 gallons) that are used to manage hazardous wastes for which hazardous waste entering the unit has an average VO concentration at the point of waste origination of greater than 500 parts per million by weight (ppmw). Additional information pertaining to the type of wastes managed in containers at this Facility can be found in Attachment II.B of the Permit.

For a container having a design capacity greater than 0.1 m³ (26 gallons) and less than or equal to 0.46 m³ (122 gallons), the Facility controls air pollutant emissions from the container in accordance with the Container Level 1 standards. The largest container of free liquids (i.e., container with volatile organic content subject to the requirements of 40 CFR Part 264, Subpart CC) stored at the LP-24 and LP-159 is 55 gallons in size. This size limit restricts the Permittee's container emission controls to Container Level 1 standards, which are applicable to containers greater than 26 gallons but less than 122 gallons in size.

For a container having a design capacity greater than 0.46 m³ (122 gallons) that is not in light material service, the Permittee will control air pollutant emissions from the container in accordance with the Container Level 1 standards.

For a container having a design capacity greater than 0.46 m³ (122 gallons) that is in light material service, the Permittee will control air pollutant emissions from the container in accordance with the Container Level 2 standards.

III.A.2. Exemption from 40 CFR § 264.1084 to 264.1087 Standards

Exemption requirements from the standards contained in 40 CFR § 264.1084 to 264.1087 are specified in 40 CFR § 264.1082.

III.A.3. Container Level 1 Standards

A container using Container Level 1 controls is one of the following:

- A container that meets the applicable U.S. Department of Transportation regulations on packaging hazardous materials for transportation.
- A container equipped with a cover and closure devices that form a continuous barrier over the container openings such that when the cover and closure

devices are secured in the closed position there are no visible holes, gaps, or other open spaces into the interior of the container. The cover may be a separate cover installed on the container (e.g. a lid on a drum or a suitably secured tarp on a roll-off box) or may be an integral part of the container structural design (e.g. a “portable tank” or bulk cargo container equipped with a screw-type cap).

- An open-top container in which an organic-vapor suppressing barrier is placed on or over the hazardous waste in the container such that no hazardous waste is exposed to the atmosphere. One example of such a barrier is application of a suitable organic-vapor suppressing foam.

III.A.3.1. Container Areas Subject to Subpart CC

NNSY is subject to 40 CFR § 264.1082(b) for controlling air pollutant emissions from containers, specifically Container Level 1 standards.

III.A.3.2. Container Level 1 Standards

Level 1 containers have controls that are specified in 40 CFR § 264.1086(c), and as outlined as follows:

III.A.3.3. Covers and Closure Devices

Containers are installed with covers and closure devices and remain secure in the closed position, except for the purposes of adding or removing hazardous waste, or for maintenance in accordance with 40 CFR § 264.1086(c)(ii.)

III.A.3.4. Inspection, Monitoring, and Repair

Inspection, monitoring, and repair requirements, specific to each container storage area in accordance to 40 CFR § 264.1084 through 264.1087. These requirements are addressed in this permit application in Attachment II.D.

III.A.3.5. Recordkeeping Requirements Under Subpart CC

Various records are required depending on the type of unit and control device. Records shall be maintained in the facility’s operating record for a minimum of three (3) years as stated in Permit Condition II.J. Recordkeeping requirements for container storage areas are addressed in.

III.A.4. Container Level 2 Standards

Container Level 2 standards are defined as a container that meets the applicable DOT regulations on packaging hazardous materials for transportation or a container that operates with no detectable organic emissions as defined in 40 CFR § 265.1081 and determined in accordance with the procedures specified in 40 CFR § 264.1086(g).

III.A.5. Container Level 1 and Level 2 Management Practices

- Whenever a hazardous waste is in a container using Container Level 1 or 2 controls, covers and closure devices for the container are installed, as applicable to the container, and secured and maintained in the closed position except for the purpose of adding or removing hazardous waste.
- Opening a spring-loaded pressure-vacuum relief valve, conservation vent, or similar type of pressure relief device, which vents to the atmosphere is allowed during normal operations for the purpose of maintaining the internal pressure of the container in accordance with the container design specifications.
- Opening of a safety device is allowed at any time that conditions require doing so to avoid an unsafe condition.
- Transfer of hazardous waste in or out of a container using Container Level 2 controls is conducted in a manner to minimize exposure of the hazardous waste to the atmosphere, to the extent practical, considering the physical properties of the hazardous waste and good engineering and safety practices for handling flammable, ignitable, explosive, reactive, or other hazardous materials.
- RCRA empty containers may be open to the atmosphere at any time.

MODULE IV - CORRECTIVE ACTION

IV.A. BACKGROUND

In 1983, the Navy conducted an Initial Assessment Study (IAS) at NNSY pursuant to the Department of Defense Installation Restoration (DOD IR) Program. The purpose of the IAS was to identify and assess sites posing a potential threat to human health and the environment from past hazardous materials operations. The IAS identified 19 sites and recommended nine (9) for additional investigation.

In 1986, a RCRA Facility Assessment (RFA) was conducted to evaluate releases of hazardous wastes or hazardous constituents and to implement corrective actions, as necessary, under the authorities of RCRA. The RFA discovered information on 31 solid waste management units (SWMUs) at the Facility, evaluated the potential for release to the environment, and made recommendations regarding the need for future investigations. A supplemental RFA (RFA-S) was conducted at NNSY in 1987, which identified 121 SWMUs; many of which also had been identified in the previous IAS and/or RFA investigations.

On July 22, 1999, EPA listed NNSY on the NPL at 64 Federal Reg. 39878 through 39885. At that time, the NNSY property included the main shipyard industrial area and several noncontiguous areas totaling more than 1,340 acres. By virtue of the Facility's listing on the NPL, the Agency for Toxic Substances and Disease Registry performed a public health assessment of NNSY. The final report was issued December 29, 2003.

In September 2004, a Federal Facilities Agreement (Agreement) between EPA, DEQ, and Navy became effective. The Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) included in the Agreement did not include the permitted units. With respect to releases of hazardous waste covered by the Agreement that are associated with the National Priorities List (NPL) portions of the Site, Resource Conservation Recovery Act (RCRA) shall be considered an Applicable or Relevant and Appropriate Requirements (ARAR) pursuant to Comprehensive Environmental Response Compensation Liability Act (CERCLA) Section 121, 42 U.S.C. Section 9621 (see Permit Attachment II.A.)

IV.B. REQUIRED CORRECTIVE ACTION

Section 3004(u) of RCRA, 42 USC § 6924(u), and regulations codified under 40 CFR § 264.101, provide that all permits issued after November 8, 1984, must require corrective action (CA) as necessary to protect human health and the environment for all releases of hazardous waste or hazardous constituents from any solid waste management unit (SWMU), regardless of when waste was placed

in the unit.

IV.C. STATUTORY COMPLIANCE WITH RCRA AND CERCLA

The Federal Facilities Agreement is intended to address and satisfy NNSY's RCRA corrective action obligations that relate to the release(s) of hazardous substances, hazardous wastes, hazardous constituents, pollutants, or contaminants at or from all areas addressed under future Corrective Action Permits. The Agreement is not intended to limit any requirements under RCRA or any other law or regulation to obtain permits, and is not intended to affect any permitted or regulated activities at the Facility not occurring in conjunction with CERCLA removal actions or remedial actions (RAs) pursuant to the Agreement.

IV.D. EMERGENCY RESPONSE; RELEASE REPORTING

The Agreement is not intended to encompass response to spills of hazardous substances from ongoing operations unless those spills occur in conjunction with CERCLA removal actions or RAs pursuant the Agreement. Nothing in this Permit shall relieve the Permittee of any obligation it may have under any law, including, but not limited to, Section 103 of CERCLA, to report releases of hazardous waste, hazardous constituents or hazardous substances to, at or from the Facility.

IV.D.1. Emergencies

If, at any time during the term of this Permit, the Permittee discovers that a release of hazardous waste or hazardous constituents at or from the Facility is presenting or may present an imminent and substantial endangerment to human health or the environment, and such release is not subject to a Contingency Plan and Emergency Procedures (Permit Attachment II.F), the Permittee shall take the following actions:

- a. Notify the Department as soon as practicable of the source, nature, extent, location, and the amount of such release, the endangerment posed by such release and the actions taken and/or to be taken, to the extent known, to address such release. Such notification shall also be confirmed in writing within three (3) days of discovery of such release; and
- b. Unless otherwise directed by the Department, immediately take such actions as are necessary and appropriate to address such release.

IV.D.2. Releases

The Permittee shall notify the Department in writing of the nature, source, extent, and location of a release of hazardous waste or hazardous constituents at or from the permitted units not covered by the Agreement, within seven (7) days of

discovery of such release which:

- a. Is not being addressed pursuant to Permit Condition IV.D.2, Emergencies; and
- b. Is not subject to the Contingency Plan and Emergency Procedures, as applicable, if set forth in the portion of the RCRA Permit issued by the Department.

IV.E. DEPARTMENT'S AUTHORITY

Nothing in this Permit shall limit the Department's authority to undertake or require any person to undertake response action or corrective action under any law, including but not limited to, Sections 104 or 106 of CERCLA, 42 U.S.C. §9604 or 9606, and Section 7003 of RCRA, 42 U.S.C. § 6973

IV.F. RECORDKEEPING

Upon completion of closure of any permitted unit, the Permittee shall maintain in the Facility's operating record, documentation of the closure measures taken.